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Issue Date: 31 May 2019

CASE NO.: 2016-MSA-8

IN THE MATTER OF:

CANYON FUEL COMPANY, LLC

Petitioner

v.

MINE SAFETY & HEALTH ADMINISTRATION (MSHA)

Party Opposing Petition

APPEARANCES:

R. HENRY MOORE, ESQ.

For The Petitioner

JASON S. GROVER, ESQ.

For The Party Opposing Petition

Before: LEE J. ROMERO, JR.
Administrative Law Judge

DECISION AND ORDER ON REMAND

This matter involves a request for modification of mandatory safety standards promulgated under the Federal Mine Safety and Health Act of 1977 ("the Act"), 30 U.S.C. § 811 et seq. Title 30 C.F.R. Part 75 sets forth mandatory standards for underground coal mines, promulgated by the U.S. Department Of Labor's Mine Safety and Health Administration (herein "Party Opposing Petition" or "MSHA") in accordance with the Act's procedures under 30 U.S.C. § 811(a).¹

¹ Section 101 of the Federal Coal Mine Health and Safety Act of 1969, as amended by Section 201 of the Federal Mine Safety and Health Act of 1977,

I. PROCEDURAL HISTORY

In the present matter, on November 21, 2017, the Deputy Assistant Secretary of Labor for Mine Safety and Health ("the Secretary") set aside the undersigned's May 23, 2017 Decision and Order concerning Canyon Fuel Company, LLC's ("Petitioner") modification of the application of the safety regulation codified at 30 C.F.R. § 75.1713-1(b), which is opposed by MSHA. In doing so, the Secretary remanded this matter for additional factual determinations and reconsideration of legal determinations.² Secretary's D&O, p. 3.

In my May 23, 2017 Decision and Order, I found Petitioner failed to meet its burden in demonstrating its proposed alternative method (Four East Fan Portal terminus) at all times guarantees no less than the same measure of protection afforded by the standard at its Sufco Mine ("the Mine" or "Sufco Mine"). (D&O, p. 43). I also found the application of 30 C.F.R. § 75.1713-1(b) would not result in a diminution of safety to the miners at the Sufco Mine because miners would have access to 24-hour emergency transportation using the West Lease Portal alternate escapeway. (D&O, p. 45). Consequently, the undersigned found Petitioner was not entitled to modification of the application of safety regulations codified at Section 75.1713-1(b). (D&O, p. 46).

On July 21, 2017, Petitioner appealed my Decision and Order, contending that I erred in weighing the benefits of the standard against the benefits of the petition, and in finding that the application of the standard does not result in a diminution of safety.

As a result, the Secretary set aside the undersigned's conclusions that the use of the Four East Fan Portal as the terminus for the Four East Portal alternative escapeway, as proposed in Petitioner's petition, does not at all times guarantee no less than the same measure of protection afforded by 30 C.F.R. § 75.1713-1(b), and that the application of the standard does not result in a diminution of safety to miners. On remand, the Secretary requested the undersigned reach additional factual determinations,³ and in light of additional factual determinations, the existing evidentiary record,

codified at 30 U.S.C. § 811(a), empowers the Secretary to make rules, under the notice-and-comment procedure set out in the Administrative Procedure Act, 5 U.S.C. § 553, for mandatory health and safety standards "for the protection of life and prevention of injuries in coal or other mines." Such rules, when put into effect, are set out at 30 C.F.R. Part 75.

² References to the transcript and exhibits are as follows: Transcript: Tr.____; Petitioner's Exhibits: PX-____; MSHA's Exhibit's: MX-____; and Joint Exhibits: JX-____; May 23, 2017 Decision and Order: D&O, p.____; Secretary's November 21, 2017 Decision and Order: Secretary's D&O, p.____.

³ The Secretary requested factual information about the location of Petitioner's Sufco Mine, road conditions, weather patterns/conditions, and availability of various medical services, among other things that will be summarized and discussed in detail below. See Secretary's D&O, pp. 20-26.

and any additional arguments of the parties, the Secretary directed the undersigned to again determine whether the use of the Four East Fan Portal as the terminus for the Four East Portal alternative escapeway at all times guarantees no less than the same measure of protection afforded by Section 75.1713-1(b), and whether application of the standard results in a diminution of safety to the miners. See Secretary's D&O, pp. 13-26.

On May 23, 2018, the instant case was remanded and assigned to the undersigned. On June 7, 2018, based upon a conference call with the parties on June 1, 2018, the undersigned issued an Order Rescheduling Hearing informing the parties that the second formal hearing would be held on October 30, 2018, in Salt Lake City, Utah. The Order further notified the parties that the Notice of Hearing and Pre-Hearing Order dated August 18, 2016, remained unchanged.

The formal hearing commenced on October 30, 2018, and continued through October 31, 2018, at which Petitioner and MSHA were represented by counsel. All parties were afforded a full opportunity to adduce testimony, offer documentary evidence and submit post-hearing briefs. Petitioner offered ten exhibits, MSHA proffered one exhibit, which were admitted into evidence along with one Joint Exhibit.

On November 14, 2018, Counsel for MSHA filed a request for judicial notice under Federal Rules of Evidence 201(b), seeking judicial notice of adjudicative facts relating to: 1) the latitude and longitude of the Sufco Mine, the Salt Lake City Airport, and the relevant hospitals in this matter; 2) Google map images of those latitudes and longitudes; 3) lightning strike information from the National Oceanic and Atmospheric Administration ("NOAA"); and 4) lightning strike data from NOAA's Severe Weather Data Inventory for each location for the years 2015 through 2018. On December 17, 2018, the undersigned granted MSHA's request for judicial notice of the NOAA data, finding the basis for MSHA's request was admissible, and therefore, the undersigned marked for identification such evidence as MSHA Exhibit No. 3 and received the exhibit into evidence.

On December 31, 2018, MSHA requested an extension of time to January 14, 2019, within which to submit post-hearing briefs, and subsequently on January 4, 2019, the undersigned issued an Order Extending Deadline for Post-Hearing Briefs to January 14, 2019. Thereafter, the parties timely filed their post-hearing briefs. Based upon the stipulations of Counsel, the evidence introduced, my observations of the demeanor of the witnesses, and having considered the arguments presented, I make the following Findings of Fact, Conclusions of Law and Order.⁴

⁴ Pursuant to 30 C.F.R. § 44.22(a), an Administrative Law Judge presiding over a hearing "shall have all powers necessary or appropriate to conduct a fair, full, and impartial hearing," and to make decisions in accordance with the Federal Mine Safety and Health Act. Id. The Administrative Law Judge's

II. ISSUES ON REMAND

On remand, the unresolved issues presented by the parties are:

1. Whether Petitioner's proposed alternative on modification will guarantee no less than the same measure of protection at Petitioner's Sufco Mine afforded by the safety standard set forth at 30 C.F.R. § 75.1713-1(b).
2. Whether Petitioner's proposed modification would achieve a net gain or at least equivalence in **overall** mine safety, taking into account both advantages and disadvantages of the alternative method, including those that are unrelated to the original standard.
3. Whether the application of 30 C.F.R. § 75.1713-1(b) results in a diminution of safety for the miners at the Sufco Mine.

III. STATEMENT OF THE CASE

A. Testimonial Evidence

Luke Bowman

Mr. Bowman testified at the formal hearing that he is the chief pilot for the Utah Department of Public Safety ("UDOPS"), which is the same position he has held since the first hearing in the instant case. On September 4, 2018, Mr. Bowman conducted a test flight into the area by Petitioner's "Four East Fan Portal" terminus at the request of Gary Leaming. (Tr. 16). Mr. Bowman conducted the "test flight" on his way to Kanab, Utah, where he was assisting the Division of Wildlife in counting sheep and other animals. (Tr. 17). He entered the canyon where the Four East Fan Portal terminus is located and passed by a couple of times before making a "flat pitch" landing. He did not get out of the helicopter, rather Mr. Bowman waited for Petitioner to take a couple of photographs to demonstrate he could land in the area before taking off to southern Utah. Mr. Bowman confirmed PX-21M is a photograph of the UDOPS helicopter by the Four East Fan Portal terminus dated September 4, 2018. (Tr. 18). Mr. Bowman stated there was adequate clearance on each side of the helicopter, as well as proper tail clearance, to safely land. (Tr. 19-20). Mr. Bowman confirmed PX-21E is another photograph dated September 4, 2018, of the UDOPS helicopter by the Four East Fan Portal. (Tr. 20). Although Mr. Bowman approached the Four East Fan Portal terminus area from the south on September 4, 2018, he testified he could approach the area from three different directions depending on the wind conditions. (Tr. 20-21). According to Mr. Bowman, landing the helicopter by the

authority extends to "findings of fact and conclusions of law, with reasons therefor, upon each material issue of fact, law, or discretion presented on the record." 30 C.F.R. § 44.32(a)(1).

Four East Fan Portal terminus was a "relatively easy landing for what we do on a day-to-day basis." Mr. Bowman explained that as a pilot with the UDOPS, he primarily conducts searches and rescue throughout Utah, and will land in various terrains, including the tops of mountains. (Tr. 21). When a flat pitch landing is impossible, Mr. Bowman can maneuver the UDOPS helicopter in such a way that one skid is on a rock while the helicopter hovers to allow for people to climb aboard. However, Mr. Bowman testified he would always be able to make a "complete flat pitch" landing by Petitioner's Four East Fan Portal. (Tr. 22).

Mr. Bowman estimated it took approximately 50 to 55 minutes to fly from Salt Lake City, Utah, to reach Petitioner's Sufco Mine. Based on his September 4, 2018 test flight, Mr. Bowman does not believe Petitioner needs to install a helipad in order to extract miners from the Four East Fan Portal terminus area. Nevertheless, Mr. Bowman previously flew for AirMed, an EMS operator, and he recalled their landing zone requirements required a larger area than that offered by the Four East Fan Portal. (Tr. 23).

Mr. Bowman testified that the UDOPS helicopters will work with other providers such as Life Flight because they can fly under conditions which other commercial helicopter operators do not operate. Thus, "a lot of times" the UDOPS helicopters will perform an extraction and meet with a commercial carrier such as Life Flight to fly the patient to a hospital. (Tr. 23). Mr. Bowman confirmed that AirMed is operated by the University of Utah in Salt Lake City, Utah. (Tr. 23-24). Mr. Bowman recalled that AirMed has multiple bases in Utah, including one in Nephi, Utah, which is "quite a bit closer" to the Sufco Mine. He further testified there is an EMS helicopter called Classic Helicopter Services in Moab, Utah, which provides a nurse-paramedic response team. Mr. Bowman stated Nephi, Utah, is located south of Provo, Utah, along Interstate 15, while Moab, Utah, is located along Interstate 80 on the eastern side of the state. Mr. Bowman explained that the UDOPS works with Classic Helicopter Services "quite a bit" because they are located on the eastside of the mountain ranges. Thus, if the UDOPS helicopters cannot operate due to weather, Classic Helicopter can come from the eastside of the mountain range, or if Classic Helicopter cannot operate due to weather, the UDOPS helicopters typically can reach a destination. (Tr. 24).

Mr. Bowman explained a weather phenomenon known as "inversion" occurs when cold air is trapped close to the surface ground while warm air is higher, which in turn causes clouds and fog to be trapped close to the surface. Mr. Bowman can take off from the airport using only instruments, but he is not certified to do an "instrument approach" back to the airport. (Tr. 25). However, in the past eight and one-half years working with the UDOPS, Mr. Bowman has only conducted an "instrument take" off on one occasion. (Tr. 25-26). In Mr. Bowman's experience, most of the inversions occur in the Salt Lake Valley, and usually the fog or clouds begin to break up at the south end of Utah County. (Tr. 26).

Depending on the nature of the rescue, Mr. Bowman flies with at least a crew of two to three people. (Tr. 26-27). The UDOPS flight crew does fly at night with vision goggles and an infrared camera. The UDOPS utilizes two helicopters and has four pilots, two of which are full-time pilots and the other pilots are part-time. (Tr. 27). The UDOPS flight crew is stationed at the Salt Lake City Airport. (Tr. 27-28). Mr. Bowman confirmed AirMed is operated by the University of Utah and has five different locations within the state from which it operates, including the "University of Utah and Davis County" and in "Nephi, Tooele, and Park City." Nine years ago, when Mr. Bowman worked for AirMed they had five helicopters, placing one helicopter at each location. (Tr. 28). AirMed had one pilot and one nurse for each designated helicopter in order to provide 24-hour EMS transports for high level trauma care. (Tr. 29). AirMed's primary function is not search and rescue, however, at times they will assist the UDOPS flight crew in such missions because they can be airborne within ten minutes. (Tr. 29-30).

Mr. Bowman explained that "very seldom" does the weather prohibit the UDOPS flight crew from completing a mission. During times of inclement weather it may delay the crew from leaving, but after the weather passes the UDOPS helicopter will take off. Thus, the UDOPS flight crew may be **delayed for one hour**, but in the meantime the Sheriff will employ other resources to reach people. When asked how long the delays may be, Mr. Bowman stated it is "hard to say," but the biggest delay is caused by inversions. Nevertheless, when inversions occur it is usually clear everywhere else and there are no storms. Therefore, once the UDOPS helicopter rises above the inversion it is clear and missions may be completed. (Tr. 31). During snow storms or severe thunderstorms, the UDOPS flight crew may have to divert its route or wait for a storm to pass, but it will usually take less than **one-half of one day** before they can fly. (Tr. 32).

Mr. Bowman testified that between AirMed, Classic Helicopter Service, Life Flight, and the UDOPS flight crews there is "very seldom" a time that no one can reach a person or get to an area.⁵ (Tr. 32).

With respect to competing obligations, Mr. Bowman explained the UDOPS has two helicopters, both of which can be employed at the same time. During the summer months, the UDOPS helicopters are often deployed at the same time. (Tr. 33). Simultaneous calls for assistance are prioritized by the UDOPS pilot and flight crew, not the dispatchers. Aside from a potential mine disaster, the UDOPS flight crews receive calls to assist in law enforcement missions and to find lost hikers. (Tr. 34). In determining how to prioritize a call for assistance, Mr. Bowman considers whether there are injuries, the

⁵ Mr. Bowman testified that Life Flight has five locations in the State of Utah from which they fly, including Ogden, Salt Lake City, Provo, St. George, and Roosevelt. (Tr. 32).

amount of people who are in need of help, and the weather conditions. For example, if a hiker on Mount Nebo requires rescuing, and at the same time miners at the Sufco Mine were in need of assistance, Mr. Bowman would send each of the UDOPS flight crews to each location. However, if that was not possible, Mr. Bowman would defer to one of the many other helicopter agencies for assistance. (Tr. 35).

On cross-examination, Mr. Bowman testified that the County Sheriff will request the assistance of the UDOPS flight crew by calling dispatch or calling Mr. Bowman directly. However, the UDOPS pilot decides which mission to complete when there are multiple requests for assistance. A UDOPS pilot always flies with a tactical flight officer who is usually a trooper from highway patrol that is trained specifically for this position. (Tr. 36). The UDOPS tactical flight officer has the ability, as well as the pilot, to "no-go a mission" if there is some mechanical or other issue that raises safety concerns. Mr. Bowman explained that ultimately it is the pilot's decision whether or not to fulfill a mission, but the pilot takes recommendations from the flight crew. (Tr. 37).

Mr. Bowman stated weather conditions such as mountain obscurations (where visibility is good at lower altitudes), inversions, fixed snow (really thick snowfall), lightning, or a 25-knot gust spread (where the difference between the minimum and maximum gusts of wind is more than 25 knots) **may prevent the UDOPS helicopters from flying or result in termination of a flight.** (Tr. 38-39).

During his September 4, 2018 test landing at the Sufco Mine, Mr. Bowman was able to land the nose of the helicopter into the wind to allow for better control of the aircraft. Mr. Bowman believed the canyon next to the Four East Fan Portal allowed him to approach and depart into the wind. (Tr. 40). Mr. Bowman confirmed he had a 20-foot clearance when he landed by the Four East Fan Portal, and that he needs a 10-foot minimum clearance. (Tr. 40-41). Hypothetically speaking, Mr. Bowman could execute a "flat landing," or he could extract people from the Four East Fan Portal using a hoist or place a skid on the surface area by the Portal if there was other debris preventing him from landing the helicopter.⁶ (Tr. 41-42). Nevertheless, Mr. Bowman admitted that in **a severe snow storm it could prevent, as long as one day,** the UDOPS helicopters from flying. (Tr. 42).

Mr. Bowman acknowledged MSHA-2 is a photograph of the 1968 Farmington Mine Disaster, resulting in the death of 78 miners. (Tr. 42). When asked, in the event of mine disaster where tremendous smoke and outgassing from a mine explosion at the Four East Fan Portal, whether he could land in that area, Mr. Bowman answered "not in that exact vicinity." (Tr. 42-43).

⁶ Mr. Bowman was looking at the picture contained in PX-21E, when he was describing where he could land or extract people by Petitioner's East Portal. (Tr. 41).

On re-direct examination, Mr. Bowman acknowledged that the photograph designated as MSHA-2 also shows a parking lot where, according to Mr. Bowman, he could land a helicopter. (Tr. 43-44). In addition, in the event Mr. Bowman could not land a helicopter, people can be hoisted out of an area, at a rate of ten people in ten to twenty minutes. (Tr. 44).

On re-cross examination, Mr. Bowman agreed that helicopters can crash. (Tr. 44). Mr. Bowman was not aware of a 2009 New Mexico State Police helicopter crash, which the National Transportation and Safety Board concluded was partly due to deteriorating weather conditions. However, Mr. Bowman testified that deteriorating weather conditions is the leading cause of helicopter crashes. (Tr. 45).

On further re-direct examination, Mr. Bowman agreed that there is a potential for car crashes on Interstates, and that ambulances can also be involved in accidents. (Tr. 45-46).

On further examination by the undersigned, Mr. Bowman confirmed UDOPS maintains the records of the missions assigned to the UDOPS flight crew, which includes records of when the UDOPS is called for assistance.⁷ (Tr. 46). Mr. Bowman maintains such records, and in doing so, he recalled that from January 2018 through October 30, 2018, the UDOPS flight crew had 213 missions and rescued 120 people. The people they rescued included hikers, hunters, rock climbers, and snowmobilers. (Tr. 47). Mr. Bowman testified that "periodically" they will have competing missions. (Tr. 47-48). For example, the UDOPS flight crew was searching for five to six days for an individual in Summit County when they received a call to retrieve nine people who were trapped due to flooding from fires. Consequently, the UDOPS flight crew left the search for the individual in Summit County in order to retrieve the nine people. Thereafter, they returned to Summit County to resume their search and rescue. Mr. Bowman explained that this does not routinely happen, rather competing missions may occur three to four times per year. Nonetheless, on Saturdays, which is the UDOPS's busiest day, the flight crew will receive typically three or four calls, but they are spread out throughout the day. (Tr. 48).

The UDOPS also maintains records of missions that they have been unable to complete, but Mr. Bowman explained he just began tracking this information at the beginning of 2018. (Tr. 48-49). Since the beginning of 2018, there have been no missions the UDOPS flight crew was not able to complete due to bad weather conditions. However, there were three missions that were **delayed for an hour** due to routing and going around storms. (Tr. 49). Mr. Bowman stated the worst of the snow storms comes in the months of January and February, with less

⁷ This portion of Mr. Bowman's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 46-63).

snow in November and December. (Tr. 50). Inversions also occur more frequently in January and February. (Tr. 50-51). Mr. Bowman recalled only one time in the past year that he had to conduct an "instrument takeoff" because of inversion. However, he was able to complete the mission, and after the mission was complete he waited in Provo, Utah, for the inversion to break-up so he could return to Salt Lake City. (Tr. 51).

Mr. Bowman confirmed that the UDOPS flight crew may have competing missions three to four times per year. (Tr. 51). If the UDOPS flight crew is unable to complete a competing mission because of a higher-priority mission, they will make suggestions of other helicopter companies that could be of assistance. (Tr. 52).

Mr. Bowman acknowledged PX-21E is a photograph of a helicopter landing. (Tr. 52-53). The area shown in the photograph is where Mr. Bowman completed a flat-pitch landing at Four East Fan Portal. With the current configuration of buildings, Mr. Bowman can only complete a flat-pitch landing in this area. (Tr. 53). If Petitioner wanted to build a safe house by the Four East Fan Portal terminus, Mr. Bowman recommended they build it by the green building, where the area curves around.⁸ (Tr. 53-54). Mr. Bowman confirmed the construction of Petitioner's safe house would not impede his ability to land the UDOPS helicopter as shown in PX-21E. (Tr. 54).

Since Mr. Bowman works for the Utah Department of Public Safety, the State of Utah is the primary area where he works. (Tr. 55). Mr. Bowman works directly for the Commissioner of the Department of Public Safety, who is in charge of overseeing all the counties and ensuring safety. (Tr. 55-56). However, the UDOPS flight crew is not scheduled to do work for the State of Utah, rather they are there to assist other counties and state agencies. If sheriffs determine they need help on a mission, they either call Mr. Bowman directly or contact dispatch, which is sufficient to obtain assistance from the UDOPS flight crew. (Tr. 56).

Mr. Bowman confirmed the UDOPS has two helicopters and four pilots. Mr. Bowman stated it took him 50 minutes to fly from the UDOPS's base of operations to the Sufco Mine, which could not be accomplished any faster. Mr. Bowman identified "Richfield" as one of the closest hospitals to the Mine. However, the UDOPS flight crew does not transport people to hospitals. (Tr. 57). Instead, the UDOPS helicopter would meet ambulances who will in turn transport people to hospitals. (Tr. 58).

The UDOPS helicopters will not operate in winds above 55 knots, depending on the gust spread. However, Mr. Bowman testified winds in

⁸ Looking at the photograph in PX-21E, Mr. Bowman stated Petitioner could build a helipad right behind the "small building" that is pictured behind the tail of the helicopter, which in Mr. Bowman's opinion would provide "plenty of room" to land on a helipad. (Tr. 55).

excess of 55 knots is not common and only occurs when a front moves across the area. (Tr. 58). The UDOPS helicopters do not provide assistance to other government or private entities by contract, rather they just complete missions as needed anywhere in Utah. (Tr. 59). Mr. Bowman explained that some counties utilize their services more than others due to more people recreating in these areas. Mr. Bowman travels "quite regularly" to Garfield County, which is beyond the Mine (two to three times per month) and is an area where a lot of people travel to see national monuments. (Tr. 60).

Mr. Bowman testified that if there is any lightning it is usually in a centralized area and the aircrafts have radars that enable them to detect weather patterns. The storms are quick moving, therefore Mr. Bowman will fly around the storms or wait for the storm to pass before landing in an area. (Tr. 61).

The UDOPS aircraft can hold up to four passengers, but because their primary focus is stabilization and extraction, Mr. Bowman believed they could transport an infinite number of passengers to rendezvous points with other helicopters or ambulances that provide medical transportation. (Tr. 61-62). Mr. Bowman estimated it would only take a couple minutes to transport two people at a time to a rendezvous point. On occasion, the UDOPS will travel with medical providers when conducting search and rescue for the sheriff's department in order to stabilize victims for transport. Mr. Bowman stated this would not reduce the number of miners they could transport because they would leave the medical providers at the Mine while they are transporting miners. (Tr. 62). Mr. Bowman stated the UDOPS flight crew does not have emergency first responders traveling with them as part of the crew. (Tr. 63).

Mr. Bowman testified there are no other physical conditions such as mountain ranges or flying at night that would impede the UDOPS flight crew from reaching the Sufco Mine. (Tr. 63).

On further re-direct examination, Mr. Bowman confirmed he could airlift Petitioner's Emergency Medical Technicians ("EMTs") to the terminus of the Four East Fan Portal. (Tr. 64).

On further re-cross examination, Mr. Bowman testified snow-related weather conditions are prevalent in January and February, while thunderstorms and lightning occur most readily in the late summer months. (Tr. 64).

Jerry Bastian

Mr. Bastian testified at the formal hearing that he works for Intermountain Life Flight ("ILF"), which is an "air-ambulance." Mr. Bastian explained that ILF provides services with fixed planes and six helicopters. (Tr. 66). ILF's six helicopters are stationed throughout the State of Utah in St. George, Roosevelt, Wasatch Front, Provo, Salt Lake City, and Ogden. (Tr. 67). When compared to the

UDOPS helicopters, ILF's helicopters can take off and fly under instrument conditions (i.e., in the clouds). (Tr. 67-68). ILF helicopters can also make landings using only instruments as long as there are instrument procedures in place, which is something they use at airports and specific hospitals. (Tr. 68-69). The hospitals for which ILF has employed instrument procedures include Unibase Medical Center (in Roosevelt), Utah Valley Regional (in Provo), Intermountain Medical Center (in Murray), Primary Children's Hospital (in Salt Lake), and McCabie Hospital (in Ogden), as well as another hospital in Logan. Mr. Bastian explained that an "instrument procedure" is a written procedure that allows an aircraft to come from a certain point in the sky in order to safely land at a specific spot. According to Mr. Bastian, for ILF's proprietary approaches it has hired a person who completes a survey to determine the best approach for a location. (Tr. 69). Presently, ILF is developing six more instrument procedures for other locations, including the Richfield Hospital. (Tr. 69-70).

Mr. Bastian testified that for the past one and one-half years he has been the chief pilot for ILF, but he worked for them for a total of four years. Prior to working for ILF, he worked for AirMed at the University of Utah, and prior to that, Mr. Bastian worked for three years transporting people offshore for oil and gas companies. Before working in private industry, Mr. Bastian flew helicopters for the United States Army for twenty-three years. (Tr. 71). Mr. Bastian explained the ILF is a part of Intermountain Health Care System, which is one of the largest medical providers in the State of Utah, consisting of smaller hospitals as well as trauma centers. (Tr. 71-72).

If Petitioner required assistance from ILF at the Sufco Mine, Petitioner would simply call ILF's communications center, request help, and then ILF would launch an aircraft. Mr. Bastian testified ILF does not contract with any company, rather their services are offered on a first-come, first-serve basis. When multiple calls come into ILF's communication center, it will send the closest aircraft to the patient or person in need, and will continue to dispatch each aircraft as calls are received. (Tr. 72). Nevertheless, if a call for assistance is received by ILF when all of its aircraft are in use, ILF will inform the caller that no aircraft are available and other assistance should be sought. (Tr. 72-73). Mr. Bastian stated there are two other EMS helicopter services in Utah, that being, AirMed and Classic Helicopter Services. (Tr. 73).

In the event of an emergency at Petitioner's Sufco Mine, Mr. Bastian testified it would take approximately fifteen minutes for an aircraft to be deployed, from the time the call comes to ILF's communication center until the time the aircraft is launched. The closest ILF location to the Mine is located in Provo, Utah, which is approximately 81 miles from the Mine, and is approximately a 45-minute flight. (Tr. 75). If, however, an aircraft could not fly out of Provo, Utah, ILF could send aircrafts from Salt Lake City or Roosevelt, both of which are approximately 55-minute flights to

Petitioner's Sufco Mine. (Tr. 75-76). ILF does not have an aircraft stationed in Moab, Utah, however, he estimated it would take approximately 50 to 55 minutes to fly from Moab to the Sufco Mine. Mr. Bastian works primarily out of ILF's Provo, Utah location. (Tr. 76).

Mr. Bastian has not traveled to Petitioner's Sufco Mine, but he has examined pictures of the Mine and the landing area by the Four East Fan Portal. (Tr. 76-77). Looking at the photograph designated as PX-21F, Mr. Bastian understood that there is 50 feet from the "small building . . . [to] the berm of the mountain."⁹ (Tr. 77). Mr. Bastian was highly confident that, just as did the UDOPS' aircraft, ILF's aircraft could also land in the area by the Four East Fan Portal even without a helipad. (Tr. 77-78).

Mr. Bastian estimated there have been 30 to 40 times within the last one year period that ILF aircrafts have been unable to respond to calls for assistance due to unfavorable weather conditions. (Tr. 78). Mr. Bastian explained that he must have a certain range of visibility and ceiling in order to fly, but he can use his instruments to depart in an "IFR environment." (Tr. 78-79). On average, ILF responds to 3,000 calls per year. When calls come in during inclement weather conditions, ILF simply turns down the call and does not fly. (Tr. 79). However, ILF will maintain communication with the person in need to let them know if an aircraft could leave in the near future. Mr. Bastian further testified ILF will also refer the person in need to other helicopter services who could possibly respond to the call. (Tr. 80). Mr. Bastian testified that last year, from January through March, ILF completed 30 IFR flights, which requires an instrument flying aircraft, because they have helicopters equipped to fly in an "instrument environment." (Tr. 81). Nonetheless, there were a small percentage of flights ILF could not complete due to icing conditions or there was an area ILF could not travel to because there was no "instrument approach." (Tr. 81-82). Mr. Bastian explained January through March are the months during which ILF performs the majority of its "instrument flying," which equates to 30 flights out of 3,000 flights per year. (Tr. 82).

On cross-examination, Mr. Bastian explained that when he flies using only instruments, it is due to "VFR conditions" which indicates poor visibility or low ceiling. Mr. Bastian explained "ceiling" indicates how high the base of the cloud layer is above the ground, while visibility indicates how far one can see into the horizon. (Tr. 83). High winds can prevent ILF from flying, but in the four years Mr. Bastian has worked for ILF, high winds have not prevented him from flying. During tornadoes or when there are high gusts of wind (50 to 60 knots), ILF will not fly. (Tr. 84). High sustained winds and lightning would prevent ILF from flying, but snow, rain, and smoke

⁹ Prior to the hearing, Mr. Bastian spoke with Mr. Luke Bowman, the chief pilot for the UDOPS fight crew, and Mr. Bowman informed Mr. Bastian there was approximately 50 feet clearance in this area. (Tr. 77; PX-21F).

would not prevent flying as long as there is sufficient visibility. (Tr. 84-85). However, ILF helicopters cannot fly in "ice" conditions. (Tr. 85).

Mr. Bastian had not reviewed a letter dated May 6, 2015, from ILF to Petitioner, which was written by Mr. William Butz. Mr. Bastian confirmed Mr. Butz was ILF's Director of Operations, and it did not surprise Mr. Bastian that Mr. Butz stated ILF was bound to a set of conservative weather criteria as it relates to flight requirements. (Tr. 86). Mr. Bastian explained that the conservative weather requirements refer to visibility and ceiling requirements set by the Federal Aviation Administration ("FAA"). (Tr. 86-87). Mr. Bastian stated ILF cannot decrease the FAA requirements, rather ILF could increase the requirements or make them more stringent. Mr. Bastian was also not surprised to hear Mr. Butz stated weather averages are not predictive of ILF's availability on any particular day. (Tr. 87).

Mr. Bastian testified twenty-two pilots work for ILF, some of which have more experience than other pilots. (Tr. 87-88). Mr. Bastian explained that, according to ILF's general operating manual guidelines, the pilot on each flight determines whether or not it is safe to fly. (Tr. 88). ILF's general operating manual is produced by the Director of Operations, the Chief Pilot, and the Director of Maintenance in order to give pilots flying parameters regarding weather and the condition of the helicopter. (Tr. 88-89). The pilot and crew of each ILF flight will monitor changing weather conditions, and will terminate the flight if necessary. Mr. Bastian was aware that up until 2000, ILF had no accidents during hoist operations. (Tr. 89). Nevertheless, Mr. Bastian confirmed that since then there have been three ILF helicopter crashes, one of which occurred on November 1, 2001, at the helipad in Ogden, Utah, while the other two were due to mechanical failure and pilot error. (Tr. 90-91).

On re-direct examination, Mr. Bastian testified he did not know the actual date on which the pilot error ILF helicopter crash occurred, but he believed it was at least 10 years ago. (Tr. 91-92). The ILF helicopter crash caused by mechanical error occurred within six months of the pilot error helicopter crash. Both ILF helicopter crashes were investigated by the NTSB. (Tr. 92). ILF will take NTSB reports and glean information as to whether crashes are the result of "pilot or system" issues, and thereafter will either adjust its standard operating procedures or retrain pilots to ensure safety. (Tr. 92-93). When ILF hires helicopter pilots they must possess a minimum amount of flying hours, specific certifications, and experience flying in the mountains and in clouds. ILF helicopter pilots must also receive "a lot" of ongoing training. (Tr. 93). Manufacturers of ILF helicopters set forth the maintenance program for each aircraft, and the FAA can inspect the aircraft. ILF has helicopter mechanics who work on its aircrafts and are certified by the FAA to do so. (Tr. 94).

On re-cross examination, Mr. Bastian testified ILF looks for pilots who have experience flying in mountainous areas because it is different from flying in other regions, and weather patterns can change rapidly in a mountainous area. (Tr. 94-95).

On further examination by the undersigned, Mr. Bastian testified in comparing ILF helicopters to that of the UDOPS helicopters, the ILF helicopters may be bigger in the sense that the rotor diameter is 38 feet and the UDOPS aircraft is 35 feet.¹⁰ ILF helicopters can transport five people plus the pilot, and they are faster, cruising at 120 knots on a regular basis. (Tr. 96). Mr. Bastian confirmed the ILF helicopters fly at night with the assistance of night-vision goggles, and can fly in snow and rain as long as there is visibility. (Tr. 97-98). Mr. Bastian testified that ILF's insurers do not dictate when its helicopters may fly. (Tr. 98).

Mr. Bastian testified ILF does not have more than one helicopter at its five locations, but each location has at least four pilots to run a location 24 hours per day. (Tr. 98). In 2016, ILF had seven helicopters, but one helicopter has since been retired. Mr. Bastian clarified that usually each location has four pilots, but at two of ILF's locations there are four pilots with one additional pilot splitting his time between the two locations at the Intermountain Medical Center and the McCabie Hospital. (Tr. 99).

Mr. Bastian testified that generally someone calls 911 before ILF is dispatched for assistance. Mr. Bastian stated that it is not necessary for anyone to be a part of the Intermountain Health Care System in order to receive assistance from ILF, so there are "often" times where ILF has competing requests for its services. (Tr. 100). If, for example, ILF has competing requests for its services in Provo, Utah, ILF will send out its Provo aircraft, and if there is another call for a "stable" patient ILF will send its aircraft from Salt Lake City. (Tr. 100-01). However, if a "scene" call is made (a more urgent call), ILF will refer them to the closest helicopter which could be AirMed at the University of Utah. ILF's communication center keeps records of all incoming calls and dispatches which go into a database. (Tr. 101). Annually, ILF completes 3,000 missions. (Tr. 101-02). Mr. Bastian explained that ILF categorizes their calls as either hospital transfers or scene calls which is anything occurring outside a hospital (i.e., a car crash, snowboard accident, or a paraglider crash). (Tr. 102). Approximately 75% of the 3,000 missions ILF completed were hospital transfers, for either stable or unstable hospital patients. (Tr. 102-03).

Mr. Bastian testified he has never been to Petitioner's Sufco Mine, nor has he been to the area in which Mr. Bowman landed the UDOPS helicopter. (Tr. 103). When any ILF helicopter goes on a mission,

¹⁰ This portion of Mr. Bastian's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 95-111).

there is always a pilot, nurse and paramedic onboard, which limits their ability to **extract** people to **one person at a time**. (Tr. 103-04).

Mr. Bastian confirmed that, like the UDOPS flight crew, ILF helicopters also encounter "inversions" when flying in Salt Lake City, which is why ILF transitioned from a visual flight program to an instrument flight program. All of ILF's pilots, with the exception of three pilots, are trained under the instrument flight program. (Tr. 104). Two of ILF's pilots in St. George and one pilot in the "valley" are not trained on instrument procedure. (Tr. 104-05). The only time ILF helicopters **will not fly** are **during instances of inclement weather**, which Mr. Bastian stated **could occur anytime during the year**. Mr. Bastian again estimated that there are approximately 30 days per year that ILF has been unable to fly due to weather. (Tr. 105). Nonetheless, Mr. Bastian admitted he did not know for sure if it was 30 days, but it is a low percentage of time that ILF is unable to fly and it **usually occurs from January through March**. (Tr. 105-06). Due to competing obligations, Mr. Bastian stated ILF consistently refers calls to another helicopter company each month at a rate of approximately five times per month. (Tr. 106).

Mr. Bastian recalled the hospitals close to Petitioner's Sufco Mine is Gunnison Hospital, which is approximately 40 to 50 miles from the Mine, and Richfield Hospital which is approximately 40 miles (when flying). (Tr. 107). If Mr. Bastian was flying from Petitioner's Sufco Mine to the Gunnison or Richfield Hospitals, it would take approximately 20 minutes to get to either hospital in optimal weather conditions. (Tr. 107-08).

Mr. Bastian testified that if winds are approximately 50 to 60 knots during a flight, he would advise the pilot to use his discretion in determining whether to continue the flight. (Tr. 108-09). Mr. Bastian reiterated that "visibility and ceiling" are primary factors that limit ILF from flying its helicopters, and if the wind velocity goes beyond 50 to 60 knots, then the helicopter pilot may exercise discretion as to whether a flight should continue. Mr. Bastian confirmed ILF does not contract its services with any government or private entity, and while it flies primarily to Intermountain Health Care Hospitals, ILF goes to various hospitals all over Utah. (Tr. 109). Mountain Star hospital is the only hospital at which ILF has a helicopter stationed, but it is not a part of the Intermountain Health Care Hospitals. (Tr. 110).

Mr. Bastian testified he is familiar with the general area of Petitioner's Sufco Mine, and in his opinion, the only physical condition other than weather conditions that would prevent him from flying in the region would be the "ceiling" height. (Tr. 110-11).

On further re-direct examination, Mr. Bastian again estimated that 75% of the flights ILF completes are hospital transfers, and that ILF completes approximately 3,000 missions per year "give or take."

(Tr. 111-12). Of the three ILF pilots that are not trained for instrument flying, Mr. Bastian did not know if they would receive training in the future or if they are going to retire. (Tr. 112).

On further re-cross examination, Mr. Bastian clarified that **visibility and ceiling are not the only factors that limit ILF's ability to fly**, but rather **extreme winds and lightning may also create such limitations**. (Tr. 112-13). Generally, ILF will fly with a three-person team, the pilot, a nurse, and a paramedic regardless of whether it is a hospital transfer or scene transfer. (Tr. 113). Each ILF helicopter has a gurney for patients to be transported, but depending on the needs of each patient the equipment inside the helicopter can be exchanged to meet individual needs. (Tr. 114-15). Mr. Bastian explained that ILF is usually called during an emergency because a typical ambulance and staff cannot care for a patient. Thus, Mr. Bastian stated ILF aircrafts are better equipped and staffed with increased capability and expertise to care for patients. Mr. Bastian could not describe all the medical equipment or services ILF provides as this was "beyond [his] capability." Mr. Bastian testified ILF is a preferred method of transportation for critical patients because of the speed of transportation, but also due to medical expertise. (Tr. 116). Mr. Bastian confirmed that a registered nurse will administer drugs on an ILF mission. (Tr. 117).

On further re-direct examination, Mr. Bastian stated on a typical ILF mission usually one nurse and one paramedic will be onboard. (Tr. 118-19). Mr. Bastian clarified that on average ILF spends 3,000 hours per year on completing missions, which equates to on average 600 missions per year, 75% of which are hospital transfers. (Tr. 120-21).

Dan Risch

Mr. Risch testified at the formal hearing that he works in Salt Lake City, Utah, for MSI Trinity Consultants ("MSI"), which is a company that works with the government and industry to provide equipment to record weather and air quality. (Tr. 122-23). Mr. Risch works as a staff meteorologist for MSI. Mr. Risch confirmed PX-22 is his curriculum vitae which he prepared, and shows he specializes in forensic meteorology. (Tr. 123). Mr. Risch explained that forensic meteorology involves looking back in time at the meteorological records to determine what may have transpired with the weather at a particular site. (Tr. 123-24). Mr. Risch also provides synoptic weather forecasting to other government bodies, and is a certified consulting meteorologist. (Tr. 124). Mr. Risch explained that obtaining a certification for being a consulting meteorologist involves written tests and interviews by a "board." (Tr. 125). Mr. Risch is also a member of the American Meteorological Society, and is a certified operator with the Weather Modification Association. (Tr. 125-26). In 1978, Mr. Risch obtained his degree in meteorology, and currently works in forensic meteorology, actual forecasting, and

researches weather data to install instrumentation for clients and government agencies.¹¹ (Tr. 126-27).

In the present case, Mr. Risch was asked to collect weather data as close to the Sufco Mine as possible, and in doing so, he collected visibility, ceiling, and wind information. Mr. Risch also collected weather data from hospital locations where miners (at the Sufco Mine) could be transported. Most of the information Mr. Risch gathered is from the National Weather Service, which has sites at airports in Salt Lake City, Ogden and Provo, Utah. He also gathered information from the University of Utah's network which is a compilation of several "stations from many different networks." (Tr. 128).

Mr. Risch confirmed there is no weather station at the Sufco Mine that gathers weather data. (Tr. 129). Nevertheless, he gathered data from the north of the Mine and the south of the Mine from 20 different sites and he rendered a report designated as PX-23. (Tr. 129-30). Mr. Risch considered wind and visibility averages from "UTSLA" and "MDXUI" sites, by looking at the average number days conditions were present during one month periods over the course of three years. (Tr. 132-33). Mr. Risch confirmed that at the Salina and Skyline stations there were very few instances in which the wind gusts exceeded 40 mph. (Tr. 134). Mr. Risch explained that the Skyline station is at an altitude of 9,000 feet, but had a visibility below "1,000" because it is at the top of a mountain ridge. (Tr. 135). Mr. Risch also confirmed that the Ogden, Salt Lake City and Provo, Utah locations very rarely have wind gusts over 40 miles per hour. (Tr. 136).

Mr. Risch also collected data on average total snowfall, but some of the locations, like Muddy Creek, did not record snowfall information. (Tr. 137). Mr. Risch explained that snowfall average is different from snow depth, which is measured by placing a ruler on the ground to measure the snow and is the average for the month. Whereas, the snowfall is measured every storm period. (Tr. 138). According to Mr. Risch's report, Salt Lake City had 13 inches of snowfall in January, while Salina had 6.9 inches and Gunnison 9.9 inches of snowfall in January. (Tr. 139). Mr. Risch explained that some areas in Utah have less snowfall than areas such as Provo, Ogden, and Salt Lake City because the storms out of the northwest are more intense, with colder winds, and more moisture due to the Great Salt Lake. (Tr. 139-40). Mr. Risch testified that "Skyline," which is the closest station to the Sufco Mine, is 2,000 feet higher than the Mine, and the Mine is on the east side where the "air mass is drying out." (Tr. 140). Mr. Risch could not determine conclusively the snow depth by the Mine, but he believed it is more comparable to the snow depth amounts at Salina and Richfield, than Provo or Salt Lake City. (Tr. 141).

¹¹ Mr. Risch was offered and accepted as an expert in meteorology. Petitioner's Exhibit 22 was also offered and received into evidence. (Tr. 127).

Mr. Risch explained the visibility from the Skyline site may be different than that of the Mine because moisture that comes in from the west hits the "Wasatch Front" and the central mountains of Utah, causing cloud and precipitation generation at higher elevations which is not seen at lower elevations and on the east side where the Mine is located. (Tr. 142).

Mr. Risch confirmed PX-23A is a chart he prepared showing visibility and ceiling height data from sites with available information. (Tr. 142-43). The chart demonstrates the hours per month both conditions were present for a three-year average.¹² (Tr. 144-45).

On cross-examination, Mr. Risch confirmed he was not able to obtain actual weather data for the Sufco Mine by the Four East Fan Portal. Mr. Risch explained he looked at a three-year average for weather data, rather than four or five years, because some of the weather stations may have not been operating during that time. (Tr. 146). Mr. Risch acknowledged that the specific sites listed in his report could have varying degrees of visibility, wind gusts, and snow each day. (Tr. 147-48). Mr. Risch confirmed that the "Muddy River" site, which is the closest site to the Mine does not have any visibility data, and he only considered wind gusts 40 miles per hour or higher. (Tr. 148-49). The data Mr. Risch collected also does not provide any information about forest fires. (Tr. 149).

Mr. Risch explained "NOAA" is the National Oceanic and Atmospheric Administration that runs the National Weather Service, and the data from NOAA is information that forensic meteorologists rely upon. (Tr. 149). Mr. Risch was not surprised the NOAA severe weather data inventory for the Ogden Airport showed anywhere from 20 to 8 lightning strikes from May 11, 2018 through June 17, 2018, and for the "mine site," 66 to 107 lightning strikes (in a two-mile radius) on various dates in July 2018. (Tr. 149-50). Mr. Risch confirmed MSHA-3 is a printout from NOAA's website containing GPS data that relates to lightning strikes concerning the Four East Fan Portal at the Sufco Mine. (Tr. 150-51). Mr. Risch agreed that mountainous terrain weather can vary dramatically depending on altitude. Mr. Risch was not surprised by the NOAA's data on lightning strikes, stating the data was "quite comparable all over the State [of Utah]." (Tr. 151-52). Mr. Risch also confirmed his report does not discuss "icy conditions."

On re-direct examination, Mr. Risch could not determine based upon MSHA-3, when the lightning strikes were occurring, if it was for a limited time, or due to multiple thunderstorms. (Tr. 153). The lightning strike data in MSHA-3 did not indicate to Mr. Risch any information about the range, where the strikes occurred, or whether the lightning could be avoided by flying around it. (Tr. 154-55).

¹² Petitioner' exhibits 23 and 23A were offered and received into evidence without objection. (Tr. 145).

Mr. Risch confirmed he did not obtain icing data because such information comes from aircraft flying in the area and is not a part of normal weather data collection. (Tr. 155). Mr. Risch explained there are some icing detectors on the surface, but the information would not apply to aircraft due to the elevational differences. Mr. Risch further explained the moisture in the atmosphere may be such that it may be frozen on the ground, but there is no freezing precipitation coming down. (Tr. 156).

On examination by the undersigned, Mr. Risch explained that on MSHA-3 "UCT" refers to Universal Coordinated Time (Mountain Time).¹³ (Tr. 157). Mr. Risch explained that lightning strikes can either be positive or negative in the clouds and on the surface, which is not of any significance. (Tr. 158). Mr. Risch testified "CG" means "cloud to ground," indicating the lightning bolt started in the clouds and went to the ground.¹⁴ (Tr. 159).

Mr. Risch confirmed his charts show wind speed, wind gust, and visibility for stations in Salina, Skyline, and Muddy Creek. The wind speed charts account for wind speed greater than "40 miles per hour," not 40 knots. (Tr. 160). Mr. Risch explained that the "visibility columns" in his charts for Salina and Skyline represent the average hours per month where visibility was at or less than 1,000 feet and at or less than a quarter of one mile. (Tr. 161). Mr. Risch agreed that the Provo Airport is closest to the Sufco Mine, but he was not sure of the exact distance between the two. Mr. Risch testified that snow depths are measured by the "co-op stations" at airports, and is recorded once per day and thereafter averaged for the entire month. (Tr. 162). However, Mr. Risch stated total snowfall is not an average, but rather each day's snowfall is added for a total snowfall each month. (Tr. 162-63). Mr. Risch explained that the snowfall is not an average and was taken over a time period in excess of three years, as well as being gathered almost 30 years ago. (Tr. 163-64). Mr. Risch stated that although the data he provided was from 30 years ago, it is all that was available at some stations. (Tr. 165-66).

Mr. Risch explained that in his report he measured the number of hours in which the visibility was less than or equal to three miles (horizontally), and whether the ceiling was less than or equal to 1,000 feet. (Tr. 167-68). Mr. Risch testified he did not investigate icing events that precluded any ground travel by ambulance or car. (Tr. 169). Mr. Risch explained that calculating the winds at miles per hour may be converted to knots by multiplying the miles per hour by 1.15. Mr. Risch testified the Skyline station is 50 miles north of the Mine and is 2,000 feet higher than the Mine. (Tr. 170).

¹³ This portion of Mr. Risch's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 157-70).

¹⁴ Counsel for MSHA confirmed MSHA-3 provides GPS coordinates of the Sufco Mine for the Four East Fan Portal, which provides the NOAA's account of lightning strikes between April 2018 and September 2018. (Tr. 159).

On further re-direct examination, Mr. Risch confirmed MSHA-3 showed a "box" in which all the lightning strikes occurred, some of which occurred at the same time. (Tr. 171-72).

On further re-cross examination, Mr. Risch agreed weather events that have not happened in the past three years can happen in the present and/or future. (Tr. 173).

Jacob Smith

Mr. Smith testified at the formal hearing that he works at Petitioner's Sufco Mine as the Engineering Manager, which he has done for three years. He oversees the mapping and the developing of the Mine with respect to planning. (Tr. 175). Mr. Smith confirmed that PX-20 is a map of the Mine and the West Lease Portal, the Four East Portal, and the long wall panel.¹⁵ (Tr. 176). The "blue panel" that is labeled "three right, six west," is the current long wall panel and was finished approximately two weeks prior to the instant formal hearing. Upon completing the "three right panel," Petitioner will begin mining the adjacent area to the east labeled "four right, four east future panel." Mr. Smith confirmed the Mine has escapeways, with the primary escapeway marked with a blue line and the alternative escapeway marked with a red line. (Tr. 177). Mr. Smith confirmed the Four East Portal is not a designated escapeway at this time. Mr. Smith testified the continuous miner sections are the "development miners" that develop entries for access to long wall panels. (Tr. 178).

Mr. Smith confirmed that when mining in the "three right panel," miners will come out of the alternative escapeway from that area and pass the Four East Portal. (Tr. 178). Walking distance from the "three right panel" to the West Lease Portal, using the current alternate escapeway is approximately six and one-half miles. In the alternative, using the Four East Portal as an escapeway would be one and one-half miles. (Tr. 179). Currently, Petitioner also has two continuous miner sections in the "four right and four east" and the distance from those areas to the Four East Fan Portal is approximately two miles, and would be an additional four and one-half miles to the West Lease Fan Portal. (Tr. 179-80). Mr. Smith testified Petitioner also has three "miner sections," one of which is in "five west" and the other two are in "Six West." Mr. Smith was not sure how far these miner sections were to the West Lease Fan Portal, but he estimated the miners would have to travel an additional four miles to reach the intersection of the "four east mains and the north mains" to get to the West Lease Fan Portal. Upon completing the "four right" section, Petitioner intends to complete the "four right, six west" long wall,

¹⁵ Mr. Smith testified the current long wall is labeled 3R4E which is short for three right, four east, and even though it is labeled "future long wall" it is where Petitioner is currently mining. (Tr. 176-77).

and thereafter, further mining will go east (which is not shown on the map). (Tr. 180).

Mr. Smith identified PX-21F as the area outside of the Four East Fan Portal, where Mr. Bowman landed the UDOPS helicopter. He confirmed this area has a storage shed for a backup fan, rotor, and blade assembly, but the building is temporary and can be easily moved because it is on a construction skid. Thus, Mr. Smith confirmed the storage shed can be moved in order to increase the landing space for a helicopter. (Tr. 181). Mr. Smith would also be in charge of designing and building the proposed "safe house" and he proposes bringing in the helicopter pilots or consultants to determine where best to place the safe house before constructing it. (Tr. 181-82). Mr. Smith testified that the "green building" seen in the photograph (PX-21F) contains an exhaust fan that measures 11 feet to 20 feet in diameter with 2,000 horsepower, and acts to pull air through the Mine and push the air out into the atmosphere. (Tr. 182). Mr. Smith confirmed PX-21C is another photograph of the exhaust fan contained in the green building. (Tr. 182-83). Mr. Smith stated the exhaust fan would also pull smoke out of the Mine. (Tr. 183).

Mr. Smith testified an opening to the Mine, which is to the left of the fan, is the Mine's intake portal and brings fresh air from the outside into the Mine. (Tr. 183). Mr. Smith stated he still concurs with his previous testimony that he would use the Four East Portal as an alternate escapeway because it is the shortest distance to exit the Mine and receive fresh air.¹⁶ (Tr. 183-84).

Mr. Smith received directions and specifications from the State of Utah as to how to construct the helipad outside of the Four East Fan Portal terminus. Mr. Smith testified Petitioner could "easily" build a helipad that would bear the weight of a Life Flight helicopter. (Tr. 184). With respect to ground transportation to the Mine, Mr. Smith confirmed that coming from Salina or Richfield, a vehicle would travel down Interstate 70 ("I-70"), and thereafter, travel on a two-lane road for 11 miles on a "fairly steep grade" through a mountain valley. (Tr. 184-85). Mr. Smith stated there is also a large fault offset that a vehicle must climb, which Petitioner calls "the dugway" and it is a 200 foot offset fault. There is no guard rail on the side. Once reaching the "summit," a vehicle must go back downhill into the Mine site location. (Tr. 185). During the wintertime, Mr. Smith stated I-70 can be hazardous due to snowy or icy conditions, and a lot of times is "snow packed." (Tr. 185-86). However, Mr. Smith confirmed the State of Utah does salt and plow I-70, and Petitioner snow plows the road going from I-70 up to the Mine, as well as "Quichapa Road" going from the Mine to "state road 10 ("SR-

¹⁶ Mr. Smith testified at the previous formal hearing in this matter, that he would use the Four East Fan Portal as the alternative escapeway. (Tr. 183).

10")." (Tr. 186-87). Mr. Smith stated the road over to SR-10 has "very steep grades."¹⁷ (Tr. 187).

On examination by the undersigned, Mr. Smith stated that the photograph designated as PX-21C shows an intake opening, but that is not the exit miners would travel out of the Four East Portal.¹⁸ If the miners exited out of the Four East Portal escapeway they would go through "the return." (Tr. 188). Mr. Smith also confirmed PX-21C shows a building with louvered doors that encases the Mine's back-up generator. (Tr. 189).

On cross-examination, Mr. Smith confirmed the coal produced at the Sufco Mine is transported from the Mine by coal trucks, which travel on the "mine road." Mr. Smith further confirmed that if the 11-mile "mine road" was closed due to hazardous weather conditions, coal trucks would be unable to transport coal away from the Mine and miners would be unable to work. (Tr. 191). Mr. Smith testified that miners would continue to work at the Mine even if the "mine road" was closed due to inclement weather because the miners who are there prior to the storm will remain on-site until the road re-opens. (Tr. 192).

Mr. Smith testified miners are not supposed to use the Four East Portal as an alternative escapeway because the designated escapeway has the "life line." (Tr. 192). However, Mr. Smith stated if he was trying to escape out of the Mine he would try to find fresh air in the "intake" as quickly as possible and follow the intake out the Four East Portal. Mr. Smith confirmed the West Lease Portal is not in return air, but the Four East Portal is in return air.¹⁹ Mr. Smith explained the alternative escapeway is in return air all the way from the "Three Right, Four East" and "Four Right, Four East" sections, and the intake air begins at the intersection of the "North Mains" and "Four East." (Tr. 193). Mr. Smith explained there are two continuous miner sections near the "Three Right, Four East" long wall panel, and the miner sections labeled "Five Mains and "Six West Mains," and the alternative escapeway will be in return air for miner sections coming from "Five West" and "Six West" all the way to the intersection of the "North Mains" and "Four East Mains." Mr. Smith further explained miners coming from "Three Right, Four East" and "Four Right, Four East" are also in return air until they reach the intersection of the "North Mains" and "Four East Mains" where there is "clean air intake

¹⁷ Petitioner's Exhibit 20, a current map of Petitioner's Mine, was offered and received into evidence without objection. (Tr. 187).

¹⁸ This portion of Mr. Smith's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 188-91).

¹⁹ Air is introduced into the Mine by use of large fans located on the surface which pull air through the Mine. Entries which carry fresh air into the Mine are known as "intake" entries. Entries that carry air out of the Mine are known as "return" entries. Intake and return entries are separated by concrete block or metal "permanent" stoppings. In the face areas where coal is mined, temporary curtains are used to control air flow. (D&O, p. 4, n.4).

air." (Tr. 194). If, however, miners were coming from the "Five West Mains" and were to go to the Four East Portal, the miners would continue in return air from the "North Mains" and "Four East." (Tr. 194-95).

On re-direct examination, Mr. Smith clarified there is an 11-mile road from I-70 going to the Mine, and another separate road going from SR-10 to the Mine. Mr. Smith stated the majority of the coal is transported on the road going to the SR-10, but some of the coal is transported down the road to I-70. (Tr. 196).

On further examination by the undersigned, in the year prior to the first formal hearing in this matter which was held on February 6, 2017 and February 7, 2017, there was only one occasion on which Mr. Smith could not reach the Mine due to snow accumulating on the 11-mile road going to the Mine.²⁰ Mr. Smith was driving a Honda Accord and could not get up the "dugway" because he "spun out." (Tr. 196-97). He, along with another mine employee, were unable to get to the Mine because they had sedans so they caught a ride with another employee who had a four-wheel drive truck. Although Petitioner had two snow plows trying to keep the road clear, the plows could not keep up with the snowfall. (Tr. 197). Mr. Smith admitted the road to the Mine was impassable except by a vehicle with four-wheel drive, which Petitioner's ambulance does not feature. Mr. Smith was unable to determine whether the Petitioner's ambulance would have been able to travel on the road going to the Mine with heavy snowfall. (Tr. 198). Mr. Smith estimated the grade of the road up to the dugway to be five to six percent, but once at the dugway the road is "flatter," followed by another five to six percent grade incline to the summit. (Tr. 198-99). The road from the summit to the Mine travels downhill gradually, and is about four miles in distance. (Tr. 199).

Mr. Smith testified that at least once per year a miner requests to be transported in Petitioner's ambulance from the Mine to a hospital. (Tr. 199). If a miner suffers a serious injury, Petitioner calls 911 for help, and in doing so, Petitioner will place the miner in its ambulance, drive the miner down the "mine road," and meet the hospital's ambulance to transfer the miner. (Tr. 199-200). Mr. Smith estimated it was approximately 45 minutes from the Mine to the nearest hospital in Richfield, Utah. (Tr. 200). Typically, Petitioner's ambulance will meet the hospital ambulance at the "Gooseberry" exit or at the base of the "mine road" (leading out of the mine). Mr. Smith is not aware of any records demonstrating how often the road leading to the Mine has been impeded or closed due to bad road conditions. Mr. Smith explained that there may be times that the road is impassable, but the shifts at the Mine are long in duration and Petitioner has two snow plows that continuously run in order to keep the road opened. (Tr. 201).

²⁰ This portion of Mr. Smith's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 196-221).

Mr. Smith confirmed there were days when the Mine had to "idle" for a period of time, but the Mine has the capacity to store 15,000 tons of coal in the event the road to the Mine becomes impassable. (Tr. 201-02). Nevertheless, Mr. Smith testified there have been times when the Mine shut down because the storage area was full and Petitioner had to wait for trucks to reach the Mine. Mr. Smith was unable to testify as to whether the Mine had to shut down for more than a couple hours due to road conditions. (Tr. 202). Mr. Smith stated Petitioner's former Director of Process Improvement tracked "delays" on a computer system, but he no longer works for Petitioner, thus Mr. Smith would have to search for the delay information. Mr. Smith also did not know whether road conditions to or from the Mine ever prevented the transport of an injured miner from the West Lease Fan Portal to either a transfer point or the hospital. (Tr. 203). However, Mr. Smith believed Petitioner tracked the number of "reportable injuries" suffered by miners, but such information did not necessarily indicate road conditions at the time of an injury. (Tr. 203-04). Mr. Smith testified that Petitioner uses its ambulance "quite a bit" and has at least two EMTs working on each shift. (Tr. 204). According to Mr. Smith, Petitioner tries to use its ambulance anytime a miner requires medical attention. (Tr. 204-05).

Mr. Smith testified that Petitioner's ambulance is stored in a garage, and in the event of a major mine disaster, Petitioner would simply call 911 for additional help from neighboring communities who have several ambulances.²¹ (Tr. 205-06). Salina and Richfield are the closest communities to the Mine, which are 30 miles and 45 miles away, respectively. If an ambulance is coming from either Salina or Richfield they would travel up I-70 and use Petitioner's 11-mile road leading up to the Mine. (Tr. 206). The 11-mile road leading up to Petitioner's Mine is called "Convulsion Canyon Road" and/or "Sevier County Road #6008." (Tr. 207). From the time a miner is placed into Petitioner's ambulance until he is transferred into a county ambulance, Mr. Smith estimated it would take 15 to 30 minutes. However, if the injury was serious, Mr. Smith stated Petitioner would call 911 immediately and the county ambulance would likely be at the Mine by the time the miner reached the surface. (Tr. 208). As a worst case scenario, Mr. Smith stated it could take a county ambulance on average 15 to 30 minutes to reach a miner at the Mine. (Tr. 209). Mr. Smith testified Petitioner's ambulance can only transport one injured miner at one time when a miner is severely injured. (Tr. 209-10). Petitioner has EMTs or paramedics that would accompany an injured miner to the hospital. (Tr. 211).

Mr. Smith explained that typically a miner who is working underground works five to six miles from the surface of the Mine. (Tr. 211-12). Thus, Mr. Smith concluded that because underground transportation is governed by a 25 miles per hour speed limit, it is

²¹ Mr. Smith did not testify as to the specific location of the "garage" housing Petitioner's ambulance. (Tr. 205).

going to take time to transport a miner to the surface of the Mine. Irrespective of the severity of the injury, Mr. Smith stated Petitioner's surface workers will receive a call letting them know an injured miner is coming to the surface. Mr. Smith stated that in the case of a serious injury, Petitioner will call 911 immediately, but if it is something less serious like a back spasm, Petitioner will examine the miner, place him in its ambulance, and transport him to the hospital. (Tr. 212). Mr. Smith estimated that the drive time from the Richfield Hospital and Salina Hospital to Petitioner's Mine is 45 to 55 minutes and 30 to 35 minutes, respectively. Mr. Smith testified the Monroe Hospital is an additional 10 to 15 minutes beyond the Richfield Hospital. (Tr. 214). Petitioner does not have contracts with any ambulance providers. Mr. Smith did not know if the county ambulances provide contractual services to government, private entities, or other mines. (Tr. 215). Mr. Smith believed that whether a county ambulance had competing obligations would arise on a case-by-case basis, and the ambulances would provide services on a first-come first-serve basis. (Tr. 215-16). Mr. Smith was not aware of any occasion that Petitioner called a hospital for assistance and it was unable to provide ambulance service. However, Mr. Smith does not normally call for medical assistance, rather Petitioner's safety manager or shift coordinator calls 911 for assistance. (Tr. 216).

Mr. Smith testified that Petitioner completes an injury report for every injury regardless of the severity, and Petitioner reviews the report in order to determine the root cause of the injury. (Tr. 216-17). Mr. Smith was not under the impression that the injury reports included any recordation about how long it took for an ambulance to reach the Mine or transfer a miner to an ambulance. (Tr. 217). Assuming there are 10 county ambulances (as well as Petitioner's ambulance), Mr. Smith stated 11 miners could be transported to a hospital at a rate of one and one-half hours (per round trip). (Tr. 217-18). In Mr. Smith's experience, the ambulances coming from the Salina and Richfield Hospitals usually have two EMTs per ambulance. (Tr. 218). Mr. Smith confirmed that all the roads the ambulances travel on to reach the Mine are paved roads. (Tr. 218-19).

Mr. Smith testified that the county owns the roads leading up to the Mine, but due to lack of funding, Petitioner maintains the roads during the winter. (Tr. 219). Other than the time Mr. Smith could not reach the Mine in his vehicle, he did not know of any other time during which 24-hour emergency transportation could not reach the Mine. Mr. Smith would have been notified if an ambulance was not able to reach the Mine, and he is notified when I-70 shuts down due to snow conditions. (Tr. 220). Mr. Smith estimated that once or twice a year sections of I-70 may be shut down due to inclement weather conditions. (Tr. 221).

Gary W. Leaming

Mr. Leaming testified at the formal hearing that he last worked for Petitioner at the Sufco Mine as the Safety Manager, but he retired

on September 30, 2018. (Tr. 229-30). Mr. Leaming recalled that he testified at the prior formal hearing in this matter. (Tr. 230). Mr. Leaming was present when the photograph designated as PX-21C was taken of the Sufco Mine's Four East Fan Portal terminus. (Tr. 230-31). Jake Seiter took the photograph on September 4, 2018, which Mr. Leaming agreed accurately depicts the intake portal, fan building, the storage shed, and the landing area. (Tr. 231).

Mr. Leaming identified PX-21F as a photograph of the UDOPS helicopter (making a landing) that he took on September 4, 2018, which accurately depicts the landing of the UDOPS helicopter in relation to the storage shed and fan building. (Tr. 231-32). Mr. Leaming also identified PX-21E as another photograph he took of the UDOPS helicopter after it landed on Petitioner's property, which was also taken on September 4, 2018.²² (Tr. 232).

Mr. Leaming recalled testifying about Petitioner's contractual agreement with Sevier County for ambulance services, and he was the safety manager who oversaw the contractual agreement. (Tr. 233-34). Mr. Leaming identified "CFX-7" as the contract between Petitioner and Sevier County dated November 2016, which was arranged by Bret Alred who worked for Petitioner, but he also was associated with Sevier County EMS.²³ (Tr. 234). According to Mr. Leaming, another contract between Petitioner and Sevier County was signed again in 2017, contracting for ambulance services. (Tr. 234). Mr. Leaming testified that he would meet annually with all emergency response agencies in the area at Canyon Fuel's Salina Office, which included people from Richfield and Gunnison Hospitals, the Gunnison, Richfield and Salina police departments, as well as the fire department. (Tr. 235). The purpose of the annual meeting was to prepare and coordinate efforts in the event of a major mine emergency. The sheriff's office, along with the State of Utah's Director of Mine Safety would attend the annual meeting as well. (Tr. 236).

Mr. Leaming confirmed that some of the EMTs who work at the Sufco Mine also work part-time for Sevier County's ambulance services. (Tr. 236). Not all of Petitioner's EMTs work with Sevier County, but of the people who do, they obtain more experience and keep their skills sharpened because they receive more calls for EMT services than when working at the Mine. (Tr. 236-37).

When Mr. Leaming worked at the Sufco Mine he traveled from Salina and would drive up Convulsion Canyon Road (i.e., Sevier County Road #6008) to reach the Mine. (Tr. 237-38). Mr. Leaming described Convulsion Canyon Road as a two-lane, paved road that has various terrain altitudes with some sharp drop-offs. Mr. Leaming also explained the road going to the Mine has what is called the "dugway"

²² Petitioner's Exhibits 21C, 21E, and 21F were offered and received into evidence. (Tr. 233).

²³ In the original Decision and Order, Petitioner's exhibits were designated as "CFX-___." (D&O, p. 2).

which has caused people to go "over the edge" one to two times. Mr. Leaming described the road leading to the Mine as a "mountain road" that is not a straight road. (Tr. 238). Mr. Leaming has seen accidents occur on Convulsion Canyon Road involving private vehicles and coal trucks, some of which included trucks losing their brakes, head-on collisions, and fatalities. (Tr. 238-39). Mr. Leaming testified there were times when the conditions on the road going up to the Mine were slippery and icy. Mr. Leaming confirmed that Petitioner's ambulance, as well as the county ambulances, are two-wheel drive vehicles. (Tr. 239). Mr. Leaming confirmed Petitioner has its own snowplow to keep the road leading to the Mine passable, but Mr. Leaming stated "there are times when a storm makes it difficult to keep the road as travelable and safe as you would like it to be." There were times Mr. Leaming could not travel Convulsion Canyon Road even in his four-wheel drive vehicle. (Tr. 240). Mr. Leaming agreed that county ambulances coming to the Mine may experience difficulty reaching the mine due to road conditions. (Tr. 240-41).

On cross-examination, Mr. Leaming stated he "cannot say for certain" that Petitioner contracted in 2017 and 2018, with Sevier County for ambulance services for the Mine. (Tr. 241). Mr. Leaming confirmed that the storms impeding travel on Convulsion Canyon Road are winter storms that may include at times blizzard-like conditions which may affect visibility. (Tr. 241-42).

On re-direct examination, Mr. Leaming testified it was not Petitioner's practice to obtain a signed agreement with Sevier County for ambulance services each year. However, Mr. Leaming stated Sevier County would provide ambulance services for the Mine because Petitioner was a "part of their ambulance agreement" in that Sevier County would sell Petitioner its used ambulances for a "very reasonable price." (Tr. 242). Petitioner receives a used ambulance from Sevier County approximately every five years. (Tr. 242-43).

On examination by the undersigned,²⁴ Mr. Leaming testified the travel time from the hospitals in Gunnison and Richfield to the Sufco Mine is approximately one hour.²⁵ (Tr. 243). Mr. Leaming estimated the distance between the Richfield and Gunnison Hospitals to the Mine is 50 miles and 45 miles, respectively. Mr. Leaming stated Convulsion Canyon Road is eleven miles from I-70, and is a two-lane, paved road. (Tr. 244). Even though Mr. Leaming was the acting safety manager for Petitioner, he was not responsible for overseeing the snowplowing of the roads leading to and from the Mine, rather Petitioner's "surface people" took care of the roads. (Tr. 244-45). Mr. Leaming confirmed there were times in which the road leading to the Mine was not

²⁴ This portion of Mr. Leaming's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 243-60).

²⁵ Mr. Leaming clarified there is no hospital in Salina, rather the hospital is located in Gunnison, Utah. (Tr. 243).

cleared, but it was "infrequent," and occurred when the snow plow was inoperable. (Tr. 245). Mr. Leaming confirmed that typically it was during the winter months when roads were not cleared. (Tr. 245-46).

Mr. Leaming testified that he did not recall anytime in which the miners at the Sufco Mine were unable to reach the Mine due to road closures because Petitioner transports its miners in buses to the Mine and the authorities let Petitioner's buses pass by road blockades. Mr. Leaming explained that most of the miners drive to Petitioner's Salina office in order to ride on Petitioner's buses to the Mine. Petitioner's buses are not four-wheel drive vehicles. (Tr. 246). Mr. Leaming described Petitioner's buses as "MCI buses," which are like a touring bus that seats between 40 and 45 miners to and from the Mine. (Tr. 247). Petitioner's two buses run at least three times a day, making round trips from Salina to the Mine. (Tr. 247-48). Mr. Leaming testified that Petitioner's buses have been detained due to "slick" road conditions. However, Mr. Leaming explained the buses are infrequently detained, and if the buses are detained three to five times in one year that would be considered a severe winter. (Tr. 248). Petitioner's buses are usually detained for no more than one to two hours. (Tr. 249).

Mr. Leaming did not recall there ever being a time during which an ambulance has not been able to leave or reach the Mine due to weather conditions. Mr. Leaming stated he recalled weather conditions that "slowed an ambulance down," but it did not stop the ambulance from eventually reaching the Mine. Mr. Leaming explained that during inclement weather the ambulances reduce their speed and drive at 45 to 50 miles per hour. (Tr. 249). Mr. Leaming confirmed there are times during the winter months where roads become impassable, but it only remains that way for a matter of hours, and may occur three to five times per year during a severe winter. (Tr. 250). Mr. Leaming testified that severe winters may occur every four to six years, and December through February are the months in which the most snowfall occurs. (Tr. 251).

Mr. Leaming testified he is familiar with the ambulance service provided at the Mine, and that Petitioner's ambulance is a diesel six-wheel ambulance. (Tr. 251-52). He stated the ambulance is a "box-type" ambulance that one would see at other hospitals in the area. (Tr. 252). Petitioner's "safety group" maintains its ambulance and ensures it is properly stocked with medical supplies. (Tr. 252-53). Mr. Leaming stated Petitioner's ambulance is utilized any time a person is injured to such a severe degree an ambulance is needed. Mr. Leaming estimated that Petitioner's ambulance is used on average six times per year and is used to transport miners to a hospital. (Tr. 253). Mr. Leaming confirmed EMTs or paramedics would accompany a miner to the hospital. In the event a miner is seriously injured, Mr. Leaming stated Petitioner will call the county ambulance service and transfer the miner if necessary to the county ambulance which is equipped for severe injuries. Mr. Leaming explained there is no "designated area" in which Petitioner's ambulance will meet the county

ambulance, rather it depends on the situation. (Tr. 254). Mr. Leaming estimated Petitioner's ambulance could carry two miners that were laying down, possibly more if they were able to sit upright. However, Mr. Leaming stated that typically Petitioner has only had to carry one miner at a time in its ambulance. (Tr. 255).

Mr. Leaming worked at the Mine for 44 years, during which there was one incident that involved injury of more than one miner. (Tr. 255). Mr. Leaming recalled that incident involved two miners struck by "roof or rib" at the same time, but one miner was not seriously injured. He could not recall if the miners were placed in the same ambulance. Mr. Leaming could not recall any other mine accident at the Sufco Mine that involved multiple injuries. Approximately one time per year, Petitioner's ambulance will transfer a miner into another ambulance. (Tr. 256).

Mr. Leaming testified that on one occasion (in the 1990s) the "dugway" on Convulsion Canyon Road slid off into the canyon and travel was impeded to the Mine as only one lane of the road was opened for travel. (Tr. 257). During this time, there were other forest service roads that reached the Mine, but the roads were not paved. (Tr. 258). It took approximately six months before the road leading to the Mine was fully repaired. (Tr. 258-59). Mr. Leaming confirmed that presently there are two separate roads that lead to the Mine, that being, Convulsion Canyon Road that leads out to I-70 and Quichapa Road that leads out to SR-10. (Tr. 259). Mr. Leaming explained Quichapa Road joins onto Convulsion Canyon Road approximately one-half to three-quarters of one mile from the Mine, so Convulsion Canyon Road is the only road that travels to the Mine from the point where the roads join. (Tr. 260).

On further re-direct examination, Mr. Leaming testified Convulsion County Road runs west to south from the Mine to I-70, and Quichapa Road runs east to south from the Mine. (Tr. 260). Mr. Leaming explained that Petitioner's ambulance communicates with county ambulances by radio. Mr. Leaming explained that of the six times per year that Petitioner uses its ambulance it is normally for incidences like asthma attacks or chest pains, which may not even be work-related injuries. (Tr. 261).

On re-cross examination, Mr. Leaming testified he was an EMT for twenty years. (Tr. 262). He agreed there are some emergency medical situations that require immediate medical treatment such as respiratory issues with ventilation, severe burns, and some instances of "shock." (Tr. 262-63). Mr. Leaming explained that some instances of shock can be reversed quite easily by warming a patient, elevation of the legs, getting blood flowing, and oxygen. (Tr. 263-64). Mr. Leaming explained that shock occurs when the blood vessels expand, lowering the blood pressure and the blood cells do not retain sufficient oxygen. (Tr. 264-65). Mr. Leaming acknowledged there are several forms of shock, some of which need more intensive medical treatment. (Tr. 265).

Mr. Leaming agreed that there could be three mild winters in the area, with a more severe winter the next year. (Tr. 266).

On further re-direct examination, Mr. Leaming agreed that presently if a miner at the Sufco Mine is in distress and the intake escapeway is blocked, a miner can either exit out MSHA alternate escapeway or the Four East Portal. (Tr. 266-67). Mr. Leaming testified the Four East Portal is the fastest route out of the Mine. In the event of a severe injury, Mr. Leaming confirmed an ambulance would be called prior to the miner exiting the Mine. (Tr. 267). Mr. Leaming agreed that if a miner exited out the Four East Portal the miner could conceivably arrive at a hospital sooner than if the miner exited the West Lease Portal. (Tr. 268).

On further re-cross examination, Mr. Leaming agreed that a miner exiting the Four East Portal would only be able to receive medical treatment more quickly than that of using the West Lease Portal, if a helicopter was able to land by the Mine. (Tr. 268).

On examination by the undersigned, Mr. Leaming testified the West Lease Portal is approximately 18 to 20 feet wide, and the "overcasts" in the Portal are about as wide.²⁶ Mr. Leaming agreed that he previously testified the height of the overcasts required miners to traverse the overcasts by using a stairway, and that the overcasts would prevent the staging of vehicles because the vehicles cannot traverse the overcasts. (Tr. 269). Mr. Leaming also recalled that he identified twelve overcasts in the West Lease Portal escapeway. Mr. Leaming explained there are three overcasts very close to "Crosscut 179," and vehicles could be staged after the overcasts. However, Mr. Leaming believed that "staging vehicles . . . has serious flaws" because in an emergency not everyone is going to reach the staging area at the same time. Looking back at the "Willow Creek" incident, Mr. Leaming stated the staged vehicles were taken by the first group of people, which meant all the other people had to travel by foot. Thus, Mr. Leaming concluded "it [staging vehicles] is just not a practical thing to do." (Tr. 270).

Mr. Leaming testified that the three overcasts at Crosscut 179 are approximately 100 feet apart, which would require a miner to climb nine to ten feet over each overcasts, and continue walking 100 feet between each overcasts. Mr. Leaming explained that not all overcasts are 100 feet apart, but they all are nine to ten feet high. (Tr. 271). Mr. Leaming stated that if vehicles were staged in the West Lease Portal, the vehicles would have to be staged beyond the area of the overcasts. (Tr. 271-72). Mr. Leaming estimated vehicles could be staged three miles from the entrance of the West Lease Portal, which means miners would have to walk three miles before reaching the staged

²⁶ This portion of Mr. Leaming's testimony resulted from questions propounded by the undersigned in an effort to answer the Secretary's request for additional factual information. (Tr. 268-74).

vehicles. (Tr. 272). Nevertheless, Mr. Leaming confirmed miners would still have to traverse 12 overcasts to get to the pre-staged vehicles.²⁷ Mr. Leaming testified that typically pre-staged vehicles would be single-cab pick-up trucks with a box on the back that holds supplies. (Tr. 273). Mr. Leaming agreed miners could jump in the back of the pick-up truck as well, if the pick-up truck was still present when they arrived. (Tr. 274).

On further re-direct examination, Mr. Leaming confirmed that when walking 100 feet between the three overcasts in the West Lease Fan Portal it is essentially a tunnel with no other way out. (Tr. 274-75).

On further re-cross examination, Mr. Leaming confirmed that more than one vehicle would be able to be pre-staged in the West Lease Portal. (Tr. 276).

Joseph Pavlovich

Mr. Pavlovich testified at the formal hearing that he worked as a mine safety consultant for fourteen years until December 31, 2004, when he retired. Mr. Pavlovich identified his resume as PX-24. (Tr. 278). On September 7, 1971, Mr. Pavlovich began working as an inspector trainee in Beckley, West Virginia. Mr. Pavlovich worked for the Bureau of Mines, which changed to MESA and then to MSHA, for four and one-half years. Thereafter, Mr. Pavlovich worked as the Safety Director for United Pocahontas Coal Company (herein "United") in Norfolk, West Virginia for three years. United had five underground mines, a surface mine, and a couple of preparation plants. (Tr. 279). Mr. Pavlovich also worked for Allied Chemical at its Shannon Branch Mine in West Virginia, for one year until there was a strike and the company lost a lot of its contracts. (Tr. 279-80). Following his work with Allied Chemical, Mr. Pavlovich was rehired by MSHA and he worked for MSHA for a total of 31 years. (Tr. 280). While working for MSHA, Mr. Pavlovich worked as an inspector trainee for three and one-half years, and later as a coal mine inspector from 1978 until 1985. Mr. Pavlovich also worked in MSHA's first supervisor's pool and went to school for six months at the "Mine Academy" in Beckley, West Virginia. Thereafter, Mr. Pavlovich worked as a Field Office Supervisor in Delta, Colorado, for two years before he was promoted to Sub-District Manager in McAlester, Oklahoma. (Tr. 281). As a Sub-District Manager, Mr. Pavlovich oversaw mines in Texas, Montana, North Dakota, Colorado, Wyoming, and Kansas. (Tr. 281-82). For the last eleven years of his employment with MSHA, Mr. Pavlovich served as the District Manager of District 7 in Barbourville, Kentucky. (Tr. 282).

²⁷ The undersigned presumes that Mr. Leaming is referring to other overcasts located throughout the Mine, in addition to the three overcasts in the West Lease Portal, that miners must travel over **before** entering the West Lease Fan Portal.

In 1998, Mr. Pavlovich worked with the Partnership for Energy and Environmental Reform and was asked to go with a delegation to Ukraine and Russia in an effort to privatize the coal industry in those countries. He worked with a company called "Pier," which was a contractor of the International Labor Affairs Bureau (herein "ILAB"), an agency within the U.S. Department of Labor. (Tr. 282). Mr. Pavlovich met with labor safety people in Ukraine and Russia. Mr. Pavlovich explained the ILAB did not have personnel with mining experience, thus the ILAB asked MSHA if one of their employees would serve as a liaison to ensure government funding was properly applied to mining safety in these foreign countries. Mr. Pavlovich became the liaison, and for the last six years of his career he traveled to Ukraine to assist the country in developing mining safety programs. (Tr. 283). Following his retirement with MSHA, Mr. Pavlovich became vice-president in a company doing mine safety consulting work for the past ten years. (Tr. 283-84).

Mr. Pavlovich also conducted safety programs such as "hazard awareness programs" and he traveled to mine rescue stations to observe practices, facilities and responses to emergencies, during which Mr. Pavlovich provided information about how to respond to mine emergencies. In 1999, MSHA appointed Mr. Pavlovich as Director of the National Mine Rescue Contest, which he did for 10 years. (Tr. 284). While working with MSHA, Mr. Pavlovich participated in "33 mine fires, explosions, recoveries, and outbursts," and in doing so, he traveled underground with mine rescue teams into fire and smoke areas and the recovered areas where explosions occurred. He continued going underground even after being promoted to district manager and sub-district manager. (Tr. 285). Mr. Pavlovich was also selected to participate in the "Sago investigation" in West Virginia, where a methane explosion occurred and twelve individuals died. (Tr. 285-86). Mr. Pavlovich was also asked to do an independent review of the Crandall Canyon Outburst Disaster in which six miners died and three more people died during the rescue efforts. (Tr. 286). Mr. Pavlovich also participated in the rescue and recovery efforts of the fire at the "Aracoma Alma Mine No. 1." (Tr. 286-87). Mr. Pavlovich was retired from MSHA at the time he participated in the Sago, Crandall Canyon, and Aracoma events. (Tr. 287). After his retirement from MSHA, Mr. Pavlovich has also traveled to Ukraine approximately 50 times to work on projects, create programs for ventilation and roof control, perform rock testing, and to conduct an accident investigation program. (Tr. 288).

Mr. Pavlovich also conducted safety audits for several mines for MESI Energy and Alpha. (Tr. 289-90). Mr. Pavlovich also received the Secretary of Labor Exceptional Achievement Award on three separate occasions. (Tr. 290). Mr. Pavlovich also participated in evaluating a fire at the "Jim Walter No. 3 Mine" to help with rescue and build "seals."²⁸ (Tr. 290-92). During the Jim Walter mine fire, Mr.

²⁸ Mr. Pavlovich was offered as an expert on mine emergencies and mine rescue, but Petitioner objected to his being qualified as an expert under Federal

Pavlovich and other men had to rescue a 160-pound man whose mask leaked and he was exposed to carbon monoxide. They carried the man for 1,400 feet on a stretcher to the outside of the mine. (Tr. 292-93).

On voir dire, Mr. Pavlovich confirmed he received a college degree in business management. (Tr. 294-95). Mr. Pavlovich is familiar with the "Joseph A. Holmes Safety Association," which disseminates safety information and conducts meetings concerning mine safety. Mr. Pavlovich was at one time a member of the aforementioned safety association, but he is presently not a member. (Tr. 295). Mr. Pavlovich testified that his participation in the Crandall Canyon investigation was looking at MSHA's actions, but he did not participate in the accident investigation. (Tr. 295-96). However, Mr. Pavlovich authored reports concerning the "Sago" investigation. Mr. Pavlovich does not have a degree in any kind of "emergency management services."²⁹ (Tr. 296).

On direct examination, Mr. Pavlovich confirmed MSHA asked him to work on mine emergencies, and when MSHA hired him in 1971, MSHA did not inquire about the area of study in which he obtained a college degree. (Tr. 298). In preparing to work on Petitioner's Petition for Modification, Mr. Pavlovich reviewed documents which are identified in his report and he also traveled to the Sufco Mine. (Tr. 298-99). Upon arriving at the Sufco Mine, Mr. Pavlovich traveled in a pick-up truck through the end of the main portal (the primary escapeway) to the Four East intersection and turned right at Four East and drove outside to the "One Right, Four East" opening by the fan and the intake entry. After looking around at the Four East Fan Portal area, Mr. Pavlovich traveled down "Six West" for several miles and then turned around and traveled down the West Lease Portal alternate escapeway with the pick-up truck all the way down within one crosscut of the outside. (Tr. 299). Mr. Pavlovich also talked with mine personnel including Fred St. Peter, Gary Leaming and Jake Seiter. (Tr. 300).

Mr. Pavlovich testified that he would use the Four East Portal as an escapeway as opposed to the West Lease Portal because it provides much quicker access for miners to exit the mine in the event of an emergency. (Tr. 300). Mr. Pavlovich stated he has encountered "a lot of smoke" in the coal mines, and if he was a miner involved in an explosion or fire, Mr. Pavlovich would take the fastest route to exit the Mine in order to reach fresh air. (Tr. 301).

Mr. Pavlovich acknowledged he had experience carrying an injured miner out of the Jim Walters Mine for approximately 1,400 feet in

Rule of Evidence 702C, and requested to engage in voir dire of Pavlovich. (Tr. 294).

²⁹ Mr. Pavlovich was offered and accepted as an expert in mine emergencies and rescues. Petitioner's Exhibit 24 was also offered and received into evidence. (Tr. 297-98).

fresh air. Mr. Pavlovich explained that everyone carrying the injured miner was "exhausted." (Tr. 301). Comparing his experience to that of carrying someone down Petitioner's alternate escapeway, Mr. Pavlovich stated he would "never make it out of there if [he] was trying to carry somebody and I would have to have 100 people helping." (Tr. 301-02). Mr. Pavlovich believed there is "no way" to carry a man on a stretcher through a coal mine, stating it is "just impossible."

Mr. Pavlovich testified he does not know anyone who has staged vehicles in a mine for any purpose. Mr. Pavlovich testified vehicles are made to be used regularly and if parked for an extended amount of time, the vehicles' batteries could be dead, not to mention the mine environment is "not a friendly environment." Mr. Pavlovich also stated if a miner, who is in a panic, reaches a staged vehicle before any other miner, he is going to take the vehicle. (Tr. 302).

During his search and safety audits for MESI and Alpha, over the course of six and one-half years, Mr. Pavlovich spoke with miners to ensure they understood safety features within the mine. He also spoke with miners about how they would exit a mine in the event of an emergency, to which the miners stated they would first "travel their roadway," and secondly, they would travel the intake escapeway, but they would always try to get out of the mine as soon as possible. (Tr. 303). Mr. Pavlovich testified that a Jim Walter mine in Alabama had 100 ignitions inside the mine due to methane gas, along with an explosion that killed 13 people. Therefore, the Jim Walter mine made every intake shaft into an escapeway and purchased a vehicle that had a hoist on it with over 2,000 feet of wire rope and a basket to pull miners out of the mine in the event of an emergency. Mr. Pavlovich stated two men could fit into the hoist. (Tr. 304).

In Mr. Pavlovich's experience with emergency medical transport at mines, in District 7 (southeast Kentucky, Tennessee, and Alabama), ambulances and helicopters would respond to calls for help at the mines. (Tr. 305). Mr. Pavlovich testified that there may have been days that emergency medical services may not have been able to reach the mines he oversaw due to creeks flooding, and sometimes, snowfall. Mr. Pavlovich stated there were days MSHA inspectors could not reach the mines due to water on the roads, even with four-wheel drive vehicles. (Tr. 306). Though Mr. Pavlovich was not sure if ambulances have four-wheel drives, he estimated they were also unable to reach mines when there were mudslides, ice, or snow on the roads. (Tr. 307). Mr. Pavlovich knew of some instances in which people were injured at the mines and ambulances could not reach the mines. For example, Mr. Pavlovich stated some miners at the "Harlan Cumberland C2 Mine" had to be taken to "Kingsport" in a pick-up truck because an ambulance could not reach the mine. (Tr. 308).

Based on his visit to the Sufco Mine and his knowledge of the availability of helicopter services to the Mine, Mr. Pavlovich still believes the Four East Portal is the best route for an alternate escapeway. Mr. Pavlovich stated that if a miner cannot exit the Sufco

Mine by vehicle out of the primary escapeway, the best escapeway in the event of a mine fire (and smoke) would be the Four East Portal because it is better than trying to walk miles in smoke and trying to change out a SCSR. (Tr. 309). Mr. Pavlovich stated that the West Lease Portal was 18 to 20 feet wide in some places, but was roughly 12 feet wide in other places, thus if a vehicle brakes down on its way out of the Mine, miners would have to walk. (Tr. 309-10). Mr. Pavlovich confirmed PX-25 is a copy of his report he prepared after visiting Petitioner's Sufco Mine.³⁰ (Tr. 310).

On cross-examination, Mr. Pavlovich testified he had reviewed the map of the Sufco Mine that is designated as PX-20. (Tr. 312). Mr. Pavlovich pointed to the center of the map when identifying the Four East Portal. (Tr. 312-13). Mr. Pavlovich also identified the Six West Portal, which is left of the center on the map.³¹ (Tr. 314). Mr. Pavlovich explained the "Six West" area has escapeways leading to portals, but it does not itself contain portals. Mr. Pavlovich confirmed that in an event of a mine emergency at Sufco Mine (in the vicinity of the "Six West Mains" section), a miner would have to travel southwest (as shown on map) and travel back towards the Four East Portal (at the center of the map). (Tr. 315). At the point where the Four East Portal "breaks off" miners would either follow the approved West Lease Portal escapeway or the proposed Four East Portal escapeway. (Tr. 315-16). Mr. Pavlovich explained the West Lease Fan Portal is denoted on the map "in red" at the bottom of the map. Mr. Pavlovich traveled from the West Lease Portal to the Four East Portal by pick-up truck. (Tr. 316-17). Mr. Pavlovich entered the Mine by using the West Lease Fan Portal. (Tr. 317).

Mr. Pavlovich confirmed he drove from the Four East Intersection to the "Mains" out to the West Lease Fan Portal, and in doing so he "passed the overcasts which were "in-by." Mr. Pavlovich explained that "in-by" indicates anything that is going into the mine from an intersection, and "out-by" is anything going out from an intersection. (Tr. 318). Mr. Pavlovich testified he may have traveled under overcasts going out from the Four East Portal to the West Lease Portal, but they never went over any overcasts. (Tr. 318-19). Mr. Pavlovich confirmed he was able to ride in a pick-up truck from the intersection of the Fan East Portal and "the Mains." (Tr. 319). Mr. Pavlovich confirmed there is return air in the alternate escapeway (West Lease Portal) around "179." (Tr. 319-20). Mr. Pavlovich did not know if a miner would have to travel in return air using the Four East Portal proposed alternative escapeway. (Tr. 320).

Mr. Pavlovich testified he does not know of anyone who has used staged vehicles for the purpose of an escapeway, nor does he know of anyone who relied solely on helicopter rescue and not ground ambulance

³⁰ Petitioner's Exhibit 25 was offered and received into evidence with no objections. (Tr. 310-11).

³¹ It was noted that "Four West" and "Six West" are not portals, but are sets of "mains entries," which have escapeways. (Tr. 314).

for an escapeway. (Tr. 320-21). Mr. Pavlovich acknowledged it is possible for the Mine to maintain staged vehicles if Petitioner had enough vehicles and had charging stations. However, Mr. Pavlovich stated that charging stations cannot be placed in return air, so it depends on the lay-out of the Mine. Mr. Pavlovich knows of no mine that stores and charges vehicles for the purpose of an escapeway. (Tr. 321).

Mr. Pavlovich confirmed PX-21C is a photograph that depicts the "intake" at the Four East Fan Portal, which shows a large cubicle structure containing a fan. (Tr. 321-22). Mr. Pavlovich acknowledged that an explosion at the Sufco Mine could destroy the fan at the Four East Fan Portal. Mr. Pavlovich confirmed MSHA-2 is a picture of the "1968 Farmington disaster," which apparently destroyed a "fan" due to an explosion. (Tr. 322). Nevertheless, Mr. Pavlovich did not begin working in the mining industry until 1971, so he could not state with any certainty that the fan was destroyed during the Farmington disaster.³² (Tr. 322-23).

On further re-direct examination, Mr. Pavlovich confirmed he drove through the Sufco Mine the entirety of his tour of the Mine, and he entered the alternative escapeway (West Lease Portal) at "Crosscut 179," thus he did not travel any portion of the escapeway that has overcasts. (Tr. 325-26).

On examination, Mr. Pavlovich testified the West Lease Portal is the main portal and he traveled to the area of "Four East, One Right." (Tr. 326). Mr. Pavlovich was able to drive from the outside of the Mine through the West Lease Fan Portal, but when they were driving out of the Mine through the alternate escapeway, it was within "one crosscut of the surface." Mr. Fred St. Pierre was trying to get the area of the crosscut "cleaned up," but it was not complete when Mr. Pavlovich visited the Mine. (Tr. 327). Mr. Pavlovich confirmed Petitioner's Mine was being "rehabbed" in the West Lease Portal. (Tr. 328). Mr. Pavlovich explained an area may need to be rehabbed due to roof slacking, loose ribs, and the need to replace old roof bolts. (Tr. 329).

On further re-direct examination, Mr. Pavlovich confirmed that where he entered the Mine it was an "intake entry." (Tr. 329). Mr. Pavlovich testified that where he entered the Mine was not the alternate escapeway, but instead he entered the Mine by the "main roadway" which is also located at the "West Lease." Mr. Pavlovich confirmed the way in which he entered the Mine was a completely different entry from that of the alternate escapeway, separated by stoppings. (Tr. 330).

³² The exhibit designated MSHA-2 was rejected as an exhibit based on its lack of relevance to the present matter, and thus was not received into evidence. (Tr. 324).

Jack Seiter

Mr. Seiter works for Petitioner at the Sufco Mine as the Safety Manager, and has done so for the past two and one-half years. Prior to working as the Safety Manager, he worked for Petitioner in the Safety Department as a "Safety Professional/Engineer." (Tr. 333). Mr. Seiter examined PX-20, a map of Petitioner's Sufco Mine, and explained that where the "blue line" begins is the primary intake, that is, it is the main roadway into the Mine (labeled "A"). (Tr. 333-34). Mr. Seiter further explained that the alternate escapeway (labeled "B"), the West Lease Portal, is marked with a "red line." (Tr. 334-35).

Mr. Seiter testified there are only three overcasts on the route out of the Mine, using the alternate escapeway from anywhere in the Mine. Mr. Seiter explained that there are three overcasts that prevent a person from driving "in-by" on the alternate route (labeled "C"). (Tr. 335). The overcasts are identified by a mark, that being, a "circle with a plus sign inside the circle." (Tr. 336). From the point labeled "C" on the map, miners could drive out of the Mine and can drive under any overcasts. (Tr. 337). Mr. Seiter identified more overcasts in the "intake portal" that would block travel through the alternate escapeway (labeled "D"). (Tr. 337-38). If miners were traveling from the "Six West Mains" or "Five West Mains," they would have to go over at least two overcasts (labeled "E"). (Tr. 338-39). Mr. Seiter also labeled the area where the "Six West and Five West" join the alternate escapeway as "F." (Tr. 339-340). If a miner follows the alternate escapeway to the Four East Portal (from the "Mains" to the Four East Portal) there is one overcast (labeled "G"). (Tr. 340). Mr. Seiter identified the area in which the miners would exit out of the Four East Portal by the proposed helipad (which was marked with a "circle"). (Tr. 341). Mr. Seiter clarified that in the prior hearing the "twelve" overcasts that were allegedly in the alternate escapeway were revised, and Petitioner minimized the amount of overcasts in the alternate escapeway. (Tr. 342-43). Mr. Seiter confirmed miners would be able to drive from point "C" on the map to point "B" without having to walk over overcasts, but instead could drive under the overcasts in a pick-up truck. (Tr. 343).

Contentions of the Parties

On remand, Petitioner asserts its petition for modification of the standard set forth in 30 C.F.R. § 75.1713-1(b) should be granted. Specifically, Petitioner states it sought review of the May 23, 2017 Decision and Order, contending the undersigned erred in weighing the benefits of the standard against the benefits of the petition, and in finding that the application of the standard does not result in a diminution of safety. In doing so, Petitioner avers the Deputy Assistant Secretary of Labor for Mine Safety and Health (herein "the Secretary") set aside the undersigned's conclusions that the use of the Four East Fan Portal as the exit portal for the alternative escapeway does not at all times guarantee no less than the same

measure of protection afforded by 30 C.F.R. § 75.1713-1(b), and that application of the standard does not result in a diminution of safety to the miners. Further, Petitioner avers the Secretary directed the parties to gather additional evidence of the availability of emergency transport at the Four East Fan Portal in comparison to the availability of emergency medical transport by road to the West Lease Fan Portal.

Following the second hearing in this matter, Petitioner contends it is clear that the benefits of exiting the Mine using the Four East Portal as an alternative escapeway with the "**potential** for transport by helicopter" outweigh the benefits of traveling through the Mine using MSHA's alternate escapeway with the "**potential** of ground transport." Petitioner asserts the most significant factor that makes the Four East Portal a more advantageous alternative escapeway is the amount of time it takes for miners to exit the Mine. Petitioner avers travel time through the Four East Portal would be at least one-third of that to the West Lease Portal. Due to the longer route, Petitioner asserts it is seriously doubtful whether injured miners would even make it out of the Mine to the West Lease Fan Portal. Petitioner contends the evidence also makes clear that under "normal" weather conditions, miners who use the Four East Portal as an alternative escapeway can be delivered to a medical facility faster, by several hours, than if the miners use MSHA's West Lease Portal as an alternative escapeway. Petitioner states there are several helicopter services which can land by the Mine's Four East Fan Portal terminus, including the UDOPS, Intermountain Life Flight, AirMed, and Classic Helicopter Services, all of which coordinate so if one service is not available for a mission, another helicopter service may provide assistance. In addition, Petitioner avers that both UDOPS and Intermountain Life Flight are able to operate at night, and include medical services such as a nurse and paramedic.³³ Petitioner further avers that the evidence demonstrates any potential for weather affecting removal of miners from the Four East Fan Portal terminus is "very low." Furthermore, the UDOPS and Intermountain Life Flight helicopters can fly in adverse weather such as snow and inversions by use of their helicopter instrumentation. Petitioner argues the number of hours in any given year when wind would make it impossible for a helicopter to remove miners is also "very low," and that Mr. Bowman testified lightning is normally centralized and would only temporarily delay a helicopter flight.

Petitioner asserts ground ambulance transportation is also subject to the vagaries of the weather, and must travel uphill on a two-lane road for eleven miles, with a steep drop off on one side and no guardrail in order to reach the Mine. Petitioner avers that although Interstate Highways leading to the Mine are maintained by snowplows, there are times when road conditions are treacherous, and

³³ Petitioner acknowledged that the UDOPS does not normally carry medical personnel, but could transport personnel when necessary. Petitioner's Brief, p. 7.

consequently ambulances may be delayed in reaching the Mine. Petitioner also avers there are times during which the road from the Interstate to the Mine was not travelable by two-wheel vehicles, especially by the "dugway" which is a steep portion of the road leading to the Mine. Petitioner states trucks have gone off of the road when trying to reach the Mine, and buses have had to be detoured. Thus, Petitioner argues that even reliance on ground ambulance transportation is not a guarantee that there will be immediate medical transport.

Petitioner contends that whether a proposed modification provides the same measure of protection requires an evaluation of the safety benefits resulting from the standard and the safety benefits resulting from the alternative method. See UMWA v. MSHA (Cyprus Emerald Resources Corp.), 920 F.2d 960, 963-64 (D.C. Cir. 1990). However, it does not require the operator to adopt the "safest" alternative method, only one that meets the legal burden of approval. See, e.g., Mettiki Coal Corp., ALJ No. 1999-MSA-006, n.24 (ALJ Apr. 7, 2000). Petitioner argues there is a greater probability of miners receiving timely medical treatment exiting the Mine at the Four East Fan Portal terminus, than at the West Lease Fan Portal. Petitioner contends that using a helicopter at the Four East Portal terminus will "**likely**" result in faster evacuations to a medical facility because if a helicopter service is contacted, a helicopter may be waiting at the Four East Fan Portal terminus when miners exit the Mine. On the other hand, Petitioner asserts that if injured miners are carried out of the West Lease Portal alternative escapeway, it may take nine to ten hours to exit the Mine, plus additional travel time by ambulance to reach a medical treatment facility.

Weighing the advantages and disadvantages of the proposed alternative method, Petitioner asserts that the West Lease Portal alternative escapeway is an additional four miles longer to that of the proposed Four East Portal, the entirety of the West Lease Portal cannot be driven due to overcasts, and it requires 5 change-outs of SCSRs as opposed to two change-outs in the Four East Portal escapeway. Petitioner further asserts that use of the West Lease Portal would expose injured miners, as well as miners assisting the injured workers to additional hazards, due to the length of time it would take to exit the Mine. Additionally, Petitioner avers the "escapeway standard" makes no provision for the staging of vehicles, and MSHA itself assumes in its standards concerning caches of SCSRs that travel will be by foot. Petitioner avers that Mr. Pavlovich testified he knows of no mine that stages vehicles, and Mr. Leaming testified that attempting to stage vehicles in the "outby" by overcasts would not be practical.

Further, Petitioner argues that if miners have to use the West Lease Portal escapeway they would be exposed, for a much longer period of time, to whatever emergency had promoted the evacuation in the first place. For example, in the event of a fire or explosion, miners using the West Lease Portal escapeway would be exposed to hazards and

harmful gases for an additional four miles. Therefore, Petitioner contends that the fundamental flaw in MSHA's argument is that the standard provides "immediate" access to medical treatment using the West Lease Portal. Conversely, using the Four East Portal as an alternative escapeway would eliminate continued exposure to harmful gases, fires, or explosions by creating a faster route out of the "zone of danger," and gives miners the opportunity to reach a safe haven (i.e., the safehouse with medical supplies, food, and water) and obtain medical treatment more quickly.

Consequently, Petitioner contends that application of the standard presents a greater hazard to miners because it would require miners to be in the presence of hazardous conditions for a longer period of time, it would increase hazards for transport of injured miners, and the increased time it would take to reach a medical facility. Petitioner asserts that the availability of medical emergency transportation is inconsequential if miners are delayed in exiting the Mine or having access to ambulances due to steep winding roads. Further, Petitioner argues that use of the more expedient Four East Portal will make it less likely that emergency transportation will be needed, as miners can more quickly escape the hazards inside of the Mine. In addition, Petitioner contends use of the West Lease Portal as an alternative escapeway deprives miners from any chance of obtaining medical treatment as they evacuate. On this basis, Petitioner argues that carrying an injured miner through the West Lease Portal, as opposed to the first aid equipment that would be present at the terminus of the Four East Fan Portal, hardly replaces treatment at a hospital. Thus, Petitioner asserts that the Four East Fan Portal terminus would at least provide a heated refuge, communication capabilities, medical supplies, and food and water in the event of a mine emergency.

In contrast, on remand, MSHA asserts that nothing from additional stipulations of fact or formal hearing testimony changes the bottom line, that is, the proposed alternative escapeway cannot at all times guarantee no less than the same measure of protection afforded by the standard because there are too many circumstances in which helicopter transport would be unavailable or delayed. Similarly, MSHA contends that application of the standard would not result in a diminution of safety to the miners because the West Lease Portal ensures that miners are out of return air and in clean air faster than using the proposed escapeway to the Four East Fan Portal and because access to emergency transport is far more reliable at the West Lease Fan Portal than on the ledge overlooking a canyon. As such, MSHA argues Petitioner has failed to meet its burden. First, MSHA contends the evidence shows that helicopter transport is susceptible to more frequent weather delays than ground transportation. Second, the existing alternative West Lease Portal escapeway permits miners to escape in clean air and Petitioner may mitigate the travel time by staging pick-up trucks along the escapeway.

MSHA contends that Petitioner cannot escape the fact that weather can and does interfere with helicopter flight operations, which Mr. Bowman confirmed can change very quickly and differs at various altitudes. MSHA asserts the weather conditions affecting the ability of helicopters to fly include visibility due to low clouds or forest fires, inversions, wind speeds and gusts, lightning, snow, and ice. MSHA admits there are times when roads are affected by weather conditions, but Mr. Leaming testified that during a "severe" winter there may be three to five times the buses have not been able to reach the Mine. On the other hand, MSHA notes Mr. Bastian testified that 30 to 40 times per year Intermountain Life Flight was not able to immediately respond due to weather conditions. In addition, MSHA asserts there is also a real concern for mission conflicts concerning all helicopter services. Mr. Bowman testified the UDOPS has only two helicopters that services the entire State of Utah. Likewise, Mr. Bastian testified Intermountain Life Flight does receive multiple calls for help, and it takes requests for help in the order in which they come. MSHA contends that Petitioner identified two other helicopter services, but Petitioner presented no evidence about the capabilities or services of the helicopter services, and as a result, any reference to these helicopter companies is speculative.

In addition, MSHA argues Petitioner has likewise failed to demonstrate Section 75.1713-1(b)'s application results in a diminution of safety. MSHA concedes that the suggested West Lease Portal alternative escapeway is longer in distance to that of the Four East Portal escapeway, but MSHA asserts the West Lease Portal alternative escapeway allows miners to more quickly reach fresh air at the intersection of North Mains and Four East, as opposed to the Four East Fan Portal escapeway which requires miners to travel the entire time in return air before exiting the Mine. MSHA avers that return air can carry the products of combustion and dangerous gases in the event of a mine disaster. MSHA further asserts that the vast majority of the West Lease Portal escapeway is drivable by truck, and as noted by Mr. Pavlovich, had been significantly rehabbed for travel. Moreover, MSHA contends that the overcasts after "crosscut 179" do not prevent vehicles from traveling the West Lease Portal, and in fact, the Four East Portal also requires miners to cross over nearly all the same overcasts. Lastly, MSHA argues that in the event of a mine disaster, miners will need immediate transport to an emergency room, but Petitioner's proposed alternative escapeway depends on the hope of good weather despite a very real danger of assorted weather and mission delays.

In sum, MSHA asserts that four critical facts were revealed on remand which only strengthen the conclusion that Petitioner cannot meet its burden to justify granting its petition for modification pursuant to 30 C.F.R. § 75.1713-1(b), which are as follows: 1) lightning strikes occur regularly all across the state which would ground helicopters; 2) weather prevents or delays helicopter traffic routinely; 3) that the vast majority of the secondary escapeway to the West Lease Portal is travelable by pick-up truck; and 4) that miners

actually reach clean air faster by traveling to the West Lease Portal as opposed to the proposed route to the Four East Portal. Thus, based on the foregoing, MSHA contends the Four East Fan Portal as the exit portal for the alternative escapeway will not at all times guarantee no less than the same measure of protection afforded by 30 C.F.R. § 75.1713-1(b) and application of the standard does not result in a diminution of safety to the miners. Therefore, MSHA argues Petitioner's petition for modification should be denied.

Prefatory to the discussion that follows, the undersigned notes that many relevant facts of this case are set forth in my original Decision and Order, and thus for purposes of efficiency will not be re-summarized in this Decision and Order on Remand. I have considered all of the facts set forth in my previous Decision and Order, and I will refer to such facts when necessary in the discussion that follows.

On remand, the Secretary propounded many questions seeking additional information about the location of the Mine, the roads leading to the Mine, the operations of ambulance and helicopter services that could provide emergency transportation at the Mine, the weather conditions at the Mine and conditions affecting transportation services. The undersigned will address the Secretary's questions in the discussion that follows.

IV. ADDITIONAL FACTUAL INFORMATION REQUESTED

The questions propounded by the Secretary concerning additional factual information concern the following:

1. The precise location of the Sufco Mine and the roads leading to and from the Mine.
2. The location of the Petitioner's ambulance at the Mine.
3. The service location for any privately or publicly owned ambulances that would be used to evacuate miners and the roads such ambulances would use to travel to and from the Mine.
4. The location of the roads where the Petitioner's ambulance would transfer victims to any other ambulance services, the frequency in which these transfers occur, and the time required to make such a transfer.
5. The number of ambulances available from each entity. The capacity of Petitioner's ambulance to evacuate injured miners from the West Lease Fan Portal, including the number of ambulances, the type of vehicle, the drive system, and any lead time that might be required to contact volunteer service providers and the time it would take for such providers to reach the service locations of the ambulances.

6. The conditions of the roads that access the West Lease Fan Portal or the frequency in which these conditions are impassible and prevent an ambulance from traveling to or from the Mine. The road surfaces over which ambulances must travel to the Mine (i.e., paved, gravel), and the terrain and slope of the roads.
7. The service location of the hospital(s) to which victims are taken. The travel time under optimal conditions from the Sufco Mine to the nearest hospital, and the travel time under optimal conditions from the location where an ambulance would meet the Sufco Mine ambulance to and from the hospital to which injured miners would be transported. The frequency in which road, environmental, or other conditions impede or delay ambulance services from reaching to and from Petitioner's West Lease Fan Portal as well as the hospital.
8. Whether ambulances provide service to any private or government entities other than Petitioner, and if so, the population size of such entities and their respective needs. The frequency with which ambulance services are provided to other entities besides Petitioner and the frequency with which ambulances cannot provide service for Petitioner or are significantly delayed in providing services for Petitioner due to competing needs. The procedures used to prioritize multiple requests for ambulance services and the entity that makes the final decision concerning the same.
9. The number of injured miners that can be transported by each ambulance. Whether emergency medical first responders will be part of the ambulance crew arriving at the Sufco Mine, and the level of training of such first responders.
10. The snow and ice removal capabilities of the governmental jurisdictions responsible for maintaining the route between the ground ambulance service location and the West Lease Fan Portal. Whether Petitioner has snow and ice removal capabilities to ensure road access to the Mine.
11. The service locations of the helicopters, the flight capabilities of the aircraft, and the number of helicopters owned by each company/government entity.
12. The flight time under optimal weather conditions from the service locations to and from the Sufco Mine, and the flight time under optimal weather conditions from the Mine to any hospital to which injured miners could be taken.
13. The frequency in which weather prohibits or delays helicopters from flying to the Mine. The wind velocity above which helicopters are not permitted to operate, as well as any other limitations of the aircraft.
14. Any other physical conditions that might impede, delay, or adversely affect air evacuation from the Mine, such as mountain

ranges, inversion, operating at night, and potential unavailability of paid or volunteer personnel.

15. Whether the helicopter company/state agency provide services to any government or private entities (e.g., other cities or mines) other than Petitioner, and if so, the population size of such entities and their respective needs, the frequency with which such services are provided to any entity other than Petitioner and the frequency that competing needs would prohibit or significantly delay a helicopter rescue if requested by Petitioner.
16. The procedure that the helicopter services employ to prioritize multiple requests for their services (including any factors considered and the entity that makes the final decision on competing priorities).
17. The number of injured miners that could be transported by each helicopter.
18. The medical qualifications and/or level of medical training of helicopter services' personnel. Whether emergency medical first responders will be part of the helicopter crew arriving at the Mine for rescue operations.
19. The following Climatological data relating to the Sufco Mine location, ground ambulance services' locations, helicopter services' locations, and locations of hospitals to which injured miners would be transferred: 1) average monthly snowfall; 2) average (significant) monthly ice events; 3) average (significant) monthly fog events; and 4) monthly average in which severe winds prevent a helicopter rescue at the Sufco Mine's Four East Fan Portal.
20. Resolution of the undersigned's previous finding that the West Lease Portal escapeway can provide 24-hour emergency transportation, and Jacob Smith's testimony that snow prevented him from driving to the Mine at some point the previous year.

Secretary's D&O, pp. 20-26.

The questions raised by the Secretary in his November 21, 2017 Decision and Order of Remand will be addressed in the summarization of facts that follows.

Location of Mine

Petitioner's Sufco Mine is located approximately 30 miles east of Salina, Utah, and is reached by traveling east on I-70 and thereafter, taking Sevier County Road #6008 (i.e., Convulsion Canyon Road) north from I-70 to the Mine. (JX-2).

Service Locations of Hospitals

Injured persons would be transferred from the Mine to Sevier Valley Medical Center, in Richfield, Utah, or the Gunnison Valley Hospital, in Gunnison, Utah. However, depending on the severity of the injuries, transfer to other hospitals in the Provo or Salt Lake City areas could occur. The Sevier Valley Medical Center and the Gunnison Valley Hospital are 43 miles and 44 miles from the Mine, respectively.³⁴ (JX-2).

Roads Ambulances Would Travel To and From the Mine

From Sevier Valley Medical Center, an ambulance would travel on 1-70 from milepost 31 to 73, to the Sevier County Road #6008. From the Gunnison Valley Hospital, an ambulance would travel on US-89 from Gunnison to I-70 to Exit 56, then travel on I-70 to the Sevier County Road #6008.³⁵ (JX-2).

Location Where Petitioner's Ambulance Transfer Injured Persons

Petitioner's ambulance would "most likely" transfer injured miners to another ambulance service on Sevier County Road #6008 at "milepost 1" or "milepost 10."³⁶ In the past 20 years, Petitioner has made only two transfers to another ambulance. The amount of time for the transfer is "minimal," but depends on the circumstances and injuries. (JX-2). Mr. Smith estimated it would take 15 to 30 minutes from the time a miner is placed into Petitioner's ambulance until he is transferred into a county ambulance. (Tr. 207-08).

Petitioner's Ambulance Service

Petitioner's ambulance is parked (in a covered garage) at the Mine portal, approximately 100 yards from the West Lease Portal. Petitioner's first responders include 3 paramedics, 4 advanced EMTs, and 24 EMTs.³⁷ (JX-2). The ambulance is a two-wheel drive vehicle. (Tr. 239).

³⁴ Mr. Smith estimated it was approximately 45 minutes from the Mine to the nearest hospital in Richfield, Utah. (Tr. 200).

³⁵ Mr. Leaming confirmed that presently there are two separate roads that lead to the Mine, that being, Convulsion Canyon Road that leads out to I-70 and Quichapa Road that leads out to SR-10. (Tr. 259). Mr. Leaming explained Quichapa Road joins onto Convulsion Canyon Road approximately one-half to three-quarters of one mile from the Mine, so Convulsion Canyon Road is the only road that travels to the Mine from the point where the roads join. (Tr. 260).

³⁶ Mr. Smith testified that typically Petitioner's ambulance will meet the hospital ambulance at the "Gooseberry" exit or at the base of the Petitioner's road (leading out of the mine). (Tr. 200-01).

³⁷ Mr. Smith testified that Petitioner has at least two EMTs working on each shift. (Tr. 204).

Other Ambulance Services

Sevier County is the only ground ambulance service immediately available to the Mine.³⁸ Sevier County has ten "box truck" ambulances in four different locations, but one ambulance is located in Koosharem, Utah, which is not in close proximity to the Mine. The ambulances are two-wheel drive vehicles. (Tr. 239). Sevier County also has three "4-wheel" drive pick-up trucks "primarily" operated by paramedics equipped to respond to emergencies (but not used to transport patients). The ambulance services from Sevier County are dispatched through Sevier County EMS, and the county-wide ambulance service usage is 120 to 140 calls per month. (JX-2).

Ambulance Location	Number of Ambulances	Miles to Sufco Mine	Travel Time to Sufco Mine	Response Time To Ambulance	Average Calls per Month
Richfield, UT	Four	43 Miles	45 Minutes	3 to 4 Minutes	60 to 65
Salina, UT	Three	35 Miles	35 Minutes	3 to 4 Minutes	30 to 35
Monroe, UT	Two	58 Miles	60 Minutes	3 to 4 Minutes	30 to 35

Sevier County Ambulances transport one to two patients per ambulance, with only one critical patient per ambulance and one to two patients who have less severe injuries. Sevier County has 10 paramedics, 40 advanced EMTs, and 40 EMTs, and always maintains four full crews assigned to respond to calls through the county with additional on-call personnel. (JX-2). In Mr. Smith's experience, the ambulances coming from the Salina and Richfield Hospitals usually have 2 EMTs per ambulance.

Mr. Smith testified that in the event of a major mine disaster, Petitioner would simply call 911 for additional help from neighboring communities who have several ambulances. Salina and Richfield are the closest communities to the Mine, which are 30 miles and 43 miles away, respectively. Petitioner does not have contracts with any ambulance providers. Mr. Smith did not know if the county ambulances provide contractual services to government, private entities, or other mines. Mr. Smith believed that whether a county ambulance had competing obligations would arise on a case-by-case basis, and the ambulances would provide services on a first-come, first-serve basis. Mr. Smith was not aware of anytime that Petitioner called a hospital for assistance and it was unable to provide ambulance service. However, Mr. Smith testified he does not normally call for medical assistance,

³⁸ No other information was provided regarding any other ambulance services that would provide service to Sufco Mine. (JX-2). In addition, Mr. Leaming testified he was not sure whether Petitioner contracted in 2017 and 2018, for ambulance services with Sevier County. (Tr. 241).

rather Petitioner's safety manager or shift coordinator would call 911.

The Road Conditions Traveling To The Mine

The parties stipulated that the road surface the ambulances must travel in order to reach the Mine is a paved, four-lane road with the exception of the last eleven miles, which is a two-lane road designated as Sevier County Road #6008 and/or Convulsion Canyon Road. The Utah Department of Transportation ("UDOT") has 17 plows for snow and ice removal: 1) seven plows in Salina, Utah; 2) six plows in Richfield, Utah; and 3) four plows in Gunnison, Utah. Usually, when there is a snow storm on I-70 between Salina and the Mine, four plows from Salina are dispatched to clear the area. It would be "rare" that I-70 and Sevier County Road #6008 are closed, but it may occur. (JX-2).

During the wintertime, Mr. Smith stated I-70 can be hazardous due to snowy or icy conditions, and a lot of times is "snow packed." However, Mr. Smith confirmed the State of Utah does salt and plow I-70, and Petitioner snow plows the road going from I-70 up to the Mine as well as "Quichapa Road" going from the Mine to SR-10. Mr. Smith estimated that once or twice a year sections of I-70 may be shut down due to inclement weather conditions. Mr. Smith testified that the county owns the roads leading up to the Mine, but due to lack of funding, Petitioner maintains the roads during the winter. Other than the time Mr. Smith could not reach the Mine in his vehicle, he did not know of any other time during which 24-hour emergency transportation could not reach the Mine.

Mr. Leaming testified the two-lane mountain road (which is not a straight road) going to the Mine has various terrain altitudes with some sharp drop-offs, including the "dugway" which has caused people to go "over the edge" one to two times.³⁹ Mr. Leaming explained there are "times" (without more specificity) when the road is slippery and icy, and cannot be traveled even with a four-wheel drive vehicle. Mr. Leaming confirmed Petitioner has its own snowplow to keep Sevier County Road clear, but there were "times" (though "infrequent") when snow storms made it difficult to travel on the road. There were "times" Mr. Leaming could not travel Sevier County Road, even in his four-wheel drive vehicle.

³⁹ Mr. Smith described Sevier County Road #6008 as a two-lane road that is 11 miles long and is on a "fairly steep grade" through a mountain valley. Mr. Smith stated there is also a large fault offset that a vehicle must climb, which Petitioner calls "the dugway" and it is a 200 foot offset fault. There is no guard rail on the side. Once reaching the "summit," a vehicle must go back downhill into the Mine site location. (Tr. 184-85). Mr. Smith estimated the grade of the road up to the dugway to be five to six percent, but once at the dugway the road is "flatter," followed by another five to six percent grade incline to the summit. (Tr. 198-99).

Mr. Leaming did not recall there ever being a time during which an ambulance has not been able to leave or reach the Mine due to weather conditions. Mr. Leaming stated he recalled weather conditions that "slowed an ambulance down," but it did not stop the ambulance from eventually reaching the Mine. Mr. Leaming explained the ambulances would reduce their speed and drive at 45 to 50 miles per hour in inclement weather. Mr. Leaming confirmed there are times during the winter months where roads become impassible, but it only remains that way for a matter of hours, and may occur three to five times per year during a severe winter. Mr. Leaming testified that severe winters may occur every four to six years, and December through February are the months in which the most snowfall occurs.

In the year prior to the first formal hearing in this matter, there was only one occasion on which Mr. Smith could not reach the Mine due to snow accumulating on the eleven mile road going to the Mine. Mr. Smith was driving a Honda Accord and could not get up the "dugway" because he "spun out." Mr. Smith, along with another mine employee, were unable to get to the Mine because they had sedans so they caught a ride with another employee who had a four-wheel drive truck. Although Petitioner had two snow plows trying to keep the road clear, the plows could not keep up with the snowfall. However, Mr. Smith was not aware of any records demonstrating how often the road leading to the Mine has been impeded or closed due to bad road conditions. Mr. Smith also did not know whether road conditions to or from the Mine ever prevented the transport of an injured miner from the West Lease Fan Portal to either a transfer point or the hospital.

Private Helicopter Services

The parties stipulated Intermountain Life Flight ("ILF") has six helicopters, but one helicopter is used as a spare helicopter while other aircraft are maintained or repaired. ILF has service locations in the State of Utah in Provo, Salt Lake City, Ogden, St. George, and Roosevelt. Flight time from Salt Lake City to the Sufco Mine (both the Four East Fan Portal and the West Lease Fan Portal) is 1 hour and 15 minutes; 35 minutes from Provo; and 1 hour and 10 minutes from Ogden. The flight time from the Mine to the Sevier and Gunnison Hospitals is 20 minutes. ILF helicopters may not fly in wind velocities in excess of 45 mph and visibility below 3 miles and 1,000 foot ceiling. On each flight, ILF can carry one injured person in addition to its medical service providers. ILF has one registered nurse and one paramedic on each flight. ILF does not perform bucket transfers at night, but it does fly at night and can land on a helipad. ILF averages 50 flights per month, 90% medical and 10% search and rescue. (JX-2).

Thus, in addition to Mr. Bastian and Mr. Bowman's testimony as summarized above, I find it necessary to be repetitive in several matters since it is responsive to the Secretary's concerns. Mr. Bastian, chief pilot for ILF, testified ILF provides services with

fixed planes and six helicopters. ILF does not have more than one helicopter at its five locations, but each location has at least four pilots to run a location 24 hours per day. Mr. Bastian testified twenty-two pilots work for ILF. ILF helicopters can transport five people plus the pilot, and they are faster than the UDOPS helicopters, cruising at 120 knots on a regular basis. When any ILF helicopter goes on a mission, there is always a pilot, nurse and paramedic onboard, which limits their ability to extract people to one person at a time. Each ILF helicopter has a gurney for patients to be transported, Mr. Bastian explained that ILF is usually called because a typical ambulance and staff cannot care for a patient. Thus, Mr. Bastian stated the ILF aircrafts are better equipped and staffed with increased capability and expertise to care for patients.

In the event of an emergency at Petitioner's Sufco Mine, Mr. Bastian testified it would take approximately fifteen minutes for an aircraft to be deployed, from the time the call comes to ILF's communication center until the time the aircraft is launched. The closest ILF location to that of the Mine is located in Provo, Utah, which is approximately a 45-minute flight. If, however, an aircraft could not fly out of Provo, Utah, ILF could send aircrafts from Salt Lake City or Roosevelt, both of which are approximately 55-minute flights to Petitioner's Sufco Mine. If Mr. Bastian was flying from Petitioner's Sufco Mine to the Gunnison or Richfield Hospitals, it would take approximately 20 minutes to get to either hospital in optimal weather conditions. Mr. Bastian confirmed the ILF helicopters fly at night with the assistance of night-vision goggles, and can fly in rain and snow as long as there is visibility. Mr. Bastian believed he could land ILF's aircraft by the Four East Fan Portal escapeway without the helipad, although ILF's pilots have not done so.

If Petitioner required assistance from ILF at the Sufco Mine, Petitioner would simply call ILF's communications center, request help, and then ILF would launch an aircraft. It is not necessary for anyone to be a part of the Intermountain Health Care System in order to receive assistance from ILF. Mr. Bastian testified ILF does not contract with any company, rather their services are offered on a first-come, first-serve basis. When multiple calls come into ILF's communication center, it will send the closest aircraft to the patient or person in need, and will continue to dispatch each aircraft as calls are received. For example, if ILF has competing requests for its services in Provo, Utah, ILF will send out its Provo aircraft, and if there is another call for a "stable" patient ILF will send its aircraft from Salt Lake City. However, if a "scene" call is made (a more urgent call), ILF will refer them to the closest helicopter which could be AirMed at the University of Utah. Nevertheless, if a call for assistance is received by ILF when all of its aircraft are in use, ILF will inform the caller that no aircraft is available and other assistance should be sought.

ILF's communication center keeps records of all incoming calls and dispatches which go into a database. Annually, ILF spends 3,000

hours per year completing 600 missions per year. Mr. Bastian explained that ILF categorizes their calls as either hospital transfers or a scene call which is anything occurring outside a hospital (i.e., a car crash, snowboard accident, or a paraglider crash). Approximately 75% of the 600 missions ILF completed were hospital transfers, for either stable or unstable hospital patients.

Mr. Bastian explained that, according to ILF's general operating manual guidelines, the pilot on each flight determines whether or not it is safe to fly. The pilot and crew of each ILF flight will monitor changing weather conditions, and will terminate the flight if necessary. ILF's helicopters can take off and fly under instrument conditions. Mr. Bastian explained that when he flies using only instruments, it is due to "VFR conditions" which indicates poor visibility or low ceiling.⁴⁰ ILF helicopters can also make landings using only instruments as long as there are instrument procedures in place, which is something they use at airports and specific hospitals. The hospitals for which ILF has employed instrument procedures include Unibase Medical Center (in Roosevelt), Utah Valley Regional (in Provo), Intermountain Medical Center (in Murray), Primary Children's Hospital (in Salt Lake), and McCabie Hospital (in Ogden), as well as another hospital in Logan.

Mr. Bastian estimated that there have been 30 to 40 times within the last one year period that ILF aircrafts have been unable to respond due to unfavorable weather conditions. When calls come in during inclement weather conditions, ILF simply turns down the call and does not fly. However, ILF will maintain communication with the person in need to let them know if an aircraft could leave in the near future. Mr. Bastian further testified ILF will also refer the person in need to other helicopter services who could possibly respond to the call. Mr. Bastian testified that last year, from January through March, ILF completed 30 IFR flights, which requires an instrument flying aircraft, because they have helicopters equipped to fly in an "instrument environment." Nonetheless, there were a small percentage of flights ILF could not complete due to icing conditions or there was an area ILF could not travel to because there was no "instrument approach."

High winds can prevent ILF from flying, but in the six years Mr. Bastian has worked for ILF, high winds have not prevented him from flying. During tornadoes or when there are high gusts of wind (50 to 60 knots), ILF will not fly. High sustained winds and lightning would prevent ILF from flying, but snow, rain, and smoke would not as long as the visibility is such that Mr. Bastian can see. However, Mr. Bastian cannot fly in "ice" conditions. Mr. Bastian confirmed that, like the UDOPS flight crew, ILF helicopters also encounter "inversions" when flying in Salt Lake City, which is why ILF

⁴⁰ Mr. Bastian explained "ceiling" indicates how high the base of the cloud layer is above the ground, while visibility indicates how far one can see into the horizon.

transitioned from a visual flight program to an instrument flight program.

Mr. Bastian stated that visibility and ceiling are primary factors that limit ILF from flying its helicopters, and that if the wind velocity goes beyond 50 to 60 knots, then the helicopter pilot may exercise discretion as to whether a flight should continue. Mr. Bastian testified he is familiar with the general area of Petitioner's Sufco Mine, and in his opinion, the only physical condition other than weather conditions that would prevent him from flying in the region would be the "ceiling" height.

UDOPS Helicopter Service

The parties stipulated that the UDOPS helicopter service has two helicopters, both of which are based out of Salt Lake City International Airport. UDOPS is a state agency that assists every county in the State of Utah, and it prioritizes its requests by: 1) protection of life; 2) protection of property; 3) weather conditions; and 4) distance to call. On average UDOPS helicopters make 40 flights per month, consisting of 80% search and rescue, 15% law enforcement, and 5% administrative. The UDOPS helicopter crews operate with night vision goggles and therefore can fly at night. The UDOPS helicopter typically carries one pilot, one flight officer, and in addition, may carry two to three more people. However, if a person who is injured has to be immobile or placed on a backboard, then only one additional person may travel in the helicopter. The UDOPS helicopter crew does not include medical first responders, but it can transport first responders to the Mine to begin treatment. (JX-2).

The parties further stipulated that under optimal weather conditions, the flight time from the Salt Lake International Airport to the Mine is one hour and 15 minutes, and flight time from the Mine to the Richfield Hospital is 20 minutes. The UDOPS helicopter can extract victims to a nearby EMS helicopter or ambulance at a location close to the Mine to permit faster removal from the Four East Fan Portal. The UDOPS helicopter crew operate on an on-call basis on nights and weekends, so response would require time for a crew to reach the hanger. However, if called when an event occurs at the Mine, the crew could be on-site at the Mine by the time miners exit the Mine.⁴¹ The UDOPS helicopters can fly in about 50 knots of wind or a gust spread margin of 25 knots. UDOPS helicopters can fly in one-half mile or more visibility and an 800 foot ceiling during the day, and a 1,000 foot ceiling and one mile visibility at night. (JX-2).

⁴¹ Mr. Smith explained that typically a miner is working underground, five to six miles from the surface of the Mine. Thus, Mr. Smith concluded that because underground transportation is governed by a 25 miles per hour speed limit, it is going to take time to transport a miner to the surface of the Mine. Irrespective of the severity of the injury, Mr. Smith stated Petitioner's surface workers will receive a call letting them know an injured miner is coming to the surface. (Tr. 211-12).

Mr. Bowman testified the UDOPS utilizes two helicopters and has four pilots, two of which are full-time pilots and the other pilots are part-time.⁴² Mr. Bowman stated it took him 50 to 55 minutes to fly from the UDOPS' base of operations to Petitioner's Sufco Mine, which could not be accomplished any faster. A UDOPS pilot always flies with a tactical flight officer who is a trooper from highway patrol that is trained specifically for this position. (Tr. 36). The UDOPS tactical flight officer has the ability, as well as the pilot, to "no-go a mission" if there is some mechanical or other issue that raises safety concerns. Mr. Bowman explained that ultimately it is the pilot's decision whether or not to fulfill a mission, but the pilot takes recommendations from flight crew.

The UDOPS aircraft can hold up to four passengers, but because their primary focus is stabilization and extraction, Mr. Bowman believed they could transport an infinite number of passengers to rendezvous with other helicopters that provide medical transportation. Mr. Bowman estimated it would only take a couple of minutes to transport two people at a time to a rendezvous point. In the event Mr. Bowman could not land a helicopter, people can be hoisted out of an area, at a rate of ten people in ten to twenty minutes. The UDOPS flight crew does not transport people to hospitals. Instead, they would meet with the ambulance or helicopter (approximately two to three minutes away from the Mine) who will in turn transport people to hospitals. Moreover, although the UDOPS flight crew does not normally have emergency first responders traveling with them as part of the crew, on occasion, the UDOPS will travel with medical providers when conducting search and rescue for the sheriff's department in order to stabilize victims for transport. Mr. Bowman stated this would not reduce the number of miners they could transport because they would leave the medical providers at the Mine while they are transporting miners.

The UDOPS helicopters do not provide assistance to other government or private entities by contract, rather they just complete missions as needed anywhere in Utah. Mr. Bowman recalled that from January 2018 through October 30, 2018, the UDOPS flight crew completed 213 missions and rescued 120 people. Mr. Bowman testified that "periodically" they will have competing missions, which may occur three to four times per year. The UDOPS pilot decides which mission to complete when there are multiple requests for assistance. Mr. Bowman explained that both of the UDOPS helicopters can be employed at

⁴² Mr. Bowman directly works for the Commissioner of the Department of Public Safety, who is in charge of overseeing all the counties and ensuring safety. However, the UDOPS flight crew is not scheduled to do work for the State of Utah, rather they are there to assist other counties and state agencies. If sheriffs determine they need help on a mission, they either call Mr. Bowman directly or contact dispatch, which is sufficient to obtain assistance from the UDOPS' flight crew. (Tr. 55-56).

the same time. In determining how to prioritize a call for assistance, Mr. Bowman considers whether there are injuries, the amount of people who are in need of help, and the weather conditions. For example, if a hiker on Mount Nebo required rescuing, and at the same time miners at Petitioner's East Portal were in need of assistance, Mr. Bowman would send each of the UDOPS flight crews to each location. However, if that was not possible, Mr. Bowman would defer to one of the many other helicopter agencies for assistance.⁴³

Mr. Bowman explained that "very seldom" does the weather prohibit the UDOPS flight crew from completing a mission. Since the beginning of 2018, there have been no missions the UDOPS flight crew was not able to complete due to bad weather conditions. However, there were three missions that were delayed for an hour due to routing and going around storms. Generally, during times of inclement weather it may delay the crew from leaving, but after the weather passes the UDOPS helicopter will take off. When asked how long the delays may be, Mr. Bowman stated it is "hard to say," but the biggest delay is inversions. Nevertheless, when inversions occur it is usually clear everywhere else and there are no storms. Therefore, once the UDOPS helicopter rises above the inversion it is clear and missions may be completed. During snow storms or severe thunderstorms, the UDOPS flight crew may have to divert its route or wait for a storm to pass, but it will usually take less than one-half of one day before they can fly. Mr. Bowman stated the worst of the snow storms comes in the months of January and February, with less snow in November and December. Inversions also occur more frequently in January and February, and most of the inversions occur in the Salt Lake Valley, but begin to break up at the south end of Utah County. Mr. Bowman recalled only one time in the past year that he had to conduct an

⁴³ Mr. Bowman testified that the UDOPS helicopters will work with other providers such as Life Flight because UDOPS can fly under conditions which other commercial helicopter operators do not operate. Thus, "a lot of times" the UDOPS helicopters will perform an extraction and meet with a commercial carrier such as Life Flight to fly the patient to a hospital. Mr. Bowman confirmed AirMed is operated by the University of Utah and has five different locations in Utah. AirMed had one pilot and one nurse for each designated helicopter in order to provide 24 hour EMS transports for high level trauma care. He further testified there is another EMS helicopter company called Classic Helicopter Services in Moab, Utah, which provides a nurse-paramedic response team. Mr. Bowman explained that the UDOPS works with Classic Helicopter Services "quite a bit" because they are located on the eastside of the mountain ranges. Thus, if the UDOPS cannot operate due to weather, Classic Helicopter can come from the eastside of the mountain range, or if Classic Helicopter cannot operate due to weather, the UDOPS typically can reach a destination. (Tr. 23-24). Mr. Bowman testified that between AirMed, Classic Helicopter Service, Life Flight, and the UDOPS flight crews there is "very seldom" a time that no one can reach a person or get to an area. (Tr. 32).

"instrument takeoff" because of inversion. However, he was able to complete the mission.

Mr. Bowman stated weather conditions such as mountain obscurations (where visibility is good at lower altitudes), inversions, fixed snow (really thick snowfall), lightning, or a 25-knot gust spread, where the difference between the minimum and maximum gusts of wind is more than 25 knots, may prevent the UDOPS helicopters from flying or result in termination of a flight. The UDOPS helicopters will not operate in winds above 55 knots, depending on the gusts spread. Nonetheless, Mr. Bowman testified winds in excess of 55 knots is not common and only occurs when a front moves across the area. Mr. Bowman testified that if there is any lightning it is usually in a centralized area and the aircrafts have radar that enable them to detect weather patterns. The storms are quick moving, therefore Mr. Bowman will fly around the storms or wait for the storm to pass before landing in an area. Mr. Bowman testified there are no other physical conditions such as mountain ranges or flying at night that would impede the UDOPS flight crew from reaching the Petitioner's Four East Fan Portal.

Climatological Data Relating To The Sufco Mine

Mr. Risch proffered a report of his findings regarding wind speeds and gusts, visibility, snow depth, and snowfall.⁴⁴ (PX-23). Mr. Risch testified he was not able to obtain actual weather data at the Sufco Mine's Four East Fan Portal. Further, the location closest to the Mine, "Muddy Creek," does not provide visibility data. Mr. Risch's report also did not provide any information about forest

⁴⁴ At the request of Petitioner, Mr. Risch prepared a report of weather conditions in the vicinity of the Mine for the purpose of determining times when parameters necessary for helicopter operation were not met. This information included occurrences when winds exceeded 40 mph and visibility dropped below 1,000 feet. Mr. Risch stated lower visibility indicates either dense fog, clouds, or heavier precipitation is occurring in the near vicinity of the Mine. In addition, Mr. Risch obtained average of snowfall per month for the Sufco Mine location, ground and air ambulance locations, and of hospitals in the vicinity of the Mine. Mr. Risch collected three years of data, from June 2015 through May 2018. Mr. Risch explained that data about wind and visibility were not currently being collected at the Mine site, and information about snow depth at the Mine was "difficult" to find because other weather stations nearby were generally at higher elevations or located closer to higher mountain ranges than that of the Mine. Mr. Risch collected data from weather stations at: 1) Skyline, Utah, located 46.7 miles north of the Mine and at an elevation of 9,330 feet; 2) Muddy Creek, Utah, located 7.4 miles east, northeast of the Mine and at an elevation of 6,440 feet; 3) Salina, Utah located 20 miles south of Gunnison, 8 miles southwest of Salina, and 10 miles northeast of Richfield, and at an elevation of 5,226 feet; 4) Salt Lake City International Airport which is at an elevation of 4,226 feet; 5) Provo Municipal Airport which is at an elevation of 4,498 feet; and 6) Ogden Airport which is at an elevation of 4,440 feet. Mr. Risch noted the Sufco Mine's West Lease Fan Portal is located at approximately 7,450 feet. (PX-23).

fires, lightning strikes, and "icy conditions" or "icing events" that precluded any ground travel by ambulance or car.⁴⁵ See (PX-23).

Mr. Risch opined that at the Mine, steady winds are not estimated to reach speeds above 40 mph, but wind gusts could climb above 40 mph during the winter and spring months from November through May. However, Mr. Risch stated "only as many as 4 to 8 hours per month (up to 1 percent) [of wind gusts above 40 mph] are possible" from November through May. On the other hand, gusts speeds are estimated to occur less than 3 hours per month from June through October (less than 1 percent of the time). (PX-23).

Mr. Risch estimated visibility at the Sufco Mine by using the Skyline, Utah data. In doing so, Mr. Risch explained that low visibility data from Skyline is likely to be below 1,000 feet at a higher rate than that of the Sufco Mine because the Mine is 2,000 feet lower in elevation and further to the south by approximately 47 miles.⁴⁶ Therefore, due to the location differences, Mr. Risch opined the estimate for periods of visibility below 1,000 feet at the Mine is between 9 and 28 hours per month, which is about 75 percent of the time it occurs at Skyline and equates to 1.3 to 3.9 percent of the time between September and May. Nevertheless, Mr. Risch stated the aforementioned estimate drops considerably during the months of June through August with an estimate of zero to four hours (less than one percent per month) being expected. (PX-23).

In the areas where air and surface ambulances "may be needed," Mr. Risch opined the snowfall data indicates that in the Sevier Valley snow can fall from September to May, with more significant snowfall (over 3 inches) occurring from December to March. Annual snowfall in the Sevier Valley averaged from 15 to 25 inches. However, the average monthly snow depth (shown in Table 3 of Mr. Risch's report) in Salina, Gunnison, and Richfield indicates that little snow remains on the ground.⁴⁷ (PX-23).

For the areas to the north, where Mr. Risch stated air and ground ambulance may also be needed, Provo and Salt Lake City show more

⁴⁵ Mr. Risch testified he did not obtain icing data because such information comes from aircraft flying in the area and is not a part of normal weather data collection. Mr. Risch explained there are some icing detectors on the surface, but the information would not apply to aircraft due to the elevational differences. Mr. Risch further explained the moisture in the atmosphere may be such that it may be frozen on the ground, but there is no freezing precipitation coming down. (Tr. 155-56).

⁴⁶ Mr. Risch testified the visibility from the Skyline site may be different than that of the Mine because moisture that comes in from the west hits the "Wasatch Front" and the central mountains of Utah, causing cloud and precipitation generation at higher elevations which is not seen at lower elevations and on the east side where the Mine is located. (Tr. 142).

⁴⁷ Mr. Risch testified he could not determine conclusively the snow depth by the Mine, but he believed it is more comparable to the snow depth amounts at Salina and Richfield, which is 2 to 3 inches per year, than Provo or Salt Lake City. (Tr. 141; PX-23).

significant snowfall during the winter months with an average of 59 inches of snowfall. The average monthly snow depths remain low with winter monthly averages at Salt Lake City under six inches from December through February, and near zero otherwise. Provo demonstrated the highest average snow depths of six to seven inches in January and February. (PX-23).

Mr. Risch found steady winds in the metro area from Provo to Salt Lake City to Ogden are generally below 40 mph, however, for short periods of time wind speeds in excess of 40 mph do occur. On the other hand, Mr. Risch stated wind gusts above 40 mph occur more frequently in the aforementioned metro areas, but occur "mostly under 10 hours per month (at or less than 1 percent of the time each month). (PX-23).

With respect to visibility in the "metro area," Mr. Risch concluded it was similar to that of the Skyline site (near the Sufco Mine), in that during the winter months there are more hours when visibility is under 1,000 feet. Nevertheless, at most, during the winter months there is approximately 30 to 32 hours per month that visibility is less than 1,000 feet (or 4 percent of the time). Notwithstanding the foregoing, Mr. Risch stated "[h]istorically, there have been periods much longer." Mr. Risch further stated that it is likely that on average there will only be a limited number of periods of low visibility each year (as seen in Table 2 of Mr. Risch's report). (PX-23).

Lightning Data

As previously discussed, the undersigned took judicial notice of the NOAA data submitted by MSHA concerning information about lightning strikes in six areas, including the Sufco Mine, the Salt Lake City Airport Helipad, the Roosevelt Uintah Medical Center, the Provo Utah Valley Medical Center, and the St. George Dixie Medical Center, and the Ogden McKay Dee Hospital Heliport. Although I took judicial notice of MSHA's Exhibit 3, I noted the following in doing so:

Notwithstanding the receipt of MSHA Exhibit No. 3, the relevancy of much of the data is indeed questionable, such as lightning strikes at the St. George Medical Center, which is 210 miles from the Sufco Mine according to the Google search, and at Roosevelt Medical Center, which is 224 miles from the Sufco Mine. Although the data provides strikes by day of the month per year, the chronological times of the lightning strikes per day is not shown nor the frequency of such strikes. Thus, the probative weight and value to be accorded such data must be clarified and determined. Without further explication, much of the conclusions which can be reached based on the data is arguable speculative.

See December 17, 2018 Order Granting Judicial Notice NOAA Data, p. 3.

However, MSHA did not provide any further explication in its brief, rather MSHA only states the compiled lightning data makes clear that (1) lightning strikes happen frequently, especially in the summer months, and (2) they occur across the state. Further, MSHA argues the data was drawn from the National Weather Service, a source that cannot reasonably be questioned, and that was relied upon by Petitioner's expert. See MSHA's Brief, pp. 7-8. Given the foregoing, I do not find MSHA provided any meaningful explanation as to any of the data provided in its Exhibit 3. In particular, while MSHA's Exhibit 3 shows purported lightning strikes near various medical centers, it does not provide any information about the Sevier Valley Medical Center, in Richfield, Utah, or the Gunnison Valley Hospital, in Gunnison, Utah, which are the two closest hospitals to the Mine. Further, as noted by Petitioner, the data indicates there may be varying numbers of detectors for each purported lightning strike because some of the strikes are recorded as occurring at the same time, suggesting the same strike may have been picked up by different detectors. In addition, the size of the standard box on each "Severe Weather Data Inventory" is not specified, and as a result, the closeness of the lightning strike to the identified geographic location is unknown. Finally, it is impossible to determine how close in time the lightning strikes occurred.⁴⁸ Thus, while the lightning data reveals lightning strikes occurred in six different areas around the State of Utah, I find the data lacked specificity and is not persuasive evidence of how, if at all, lightning strikes would affect helicopter services from providing or assisting in providing medical care. Accordingly, I find and conclude MSHA's Exhibit 3 is entitled to minimal probative value.

On the other hand, I found Mr. Bowman's testimony to be of considerable probative value regarding the effects of lightning on his capability to fly aircraft. Mr. Bowman acknowledged that lightning may prevent the UDOPS helicopters from flying or result in termination of a flight. Nevertheless, Mr. Bowman testified that if there is any lightning it is usually in a centralized area and the aircrafts have radar systems that enable them to detect weather patterns. Furthermore, he stated the storms are quick moving, therefore Mr. Bowman will fly around the storms or wait for the storm to pass before landing in an area. Mr. Bowman testified thunderstorms and lightning occur most readily in the late summer months.

V. DISCUSSION

Under Section 101(a) of the Act, the Labor Secretary must promulgate "mandatory health or safety standards for the protection of

⁴⁸ Indeed, Mr. Risch testified he could not determine, based upon MSHA-3, when the lightning strikes were occurring, if it was for a limited time, or due to multiple thunderstorms. The lightning strike data in MSHA-3 did not indicate to Mr. Risch any information about the range, where the strikes occurred, or whether the lightning could be avoided by flying around it. (Tr. 153-55).

life and prevention of injuries in coal or other mines." 30 U.S.C. § 811(a).

Nevertheless, pursuant to Section 101(c) of the Act, the Secretary may, upon petition by the operator or the representative of miners, modify the application of any mandatory safety standard to a coal or other mine. Modification is proper if the Secretary determines that an alternative method of achieving the result of such standard exists which will **at all times guarantee no less than the same measure of protection** afforded the miners of such mine by such standard, or that **the application of such standard to such mine will result in a diminution of safety** to the miners. 30 U.S.C. § 811(c); see 30 U.S.C. § 44.4(a). Consequently, modification is proper if an equally effective alternative exists or the regulatory standard itself negatively impacts mine safety. See id.

Petitions for modification must include a "concise statement of the modification requested, and whether the petitioner proposes to establish an alternate method in lieu of the mandatory safety standard or alleges that application of the standard will result in diminution of safety to the miners affected or requests relief based on both grounds." 30 C.F.R. § 44.11. In addition, the party petitioning for modification shall have the burden of proving its case by a **preponderance of evidence**. 30 C.F.R. § 44.30(b); see also 5 U.S.C. § 556(d); Rosebud Mining Co. v. MSHA, 827 F.3d 1090, 1093 (D.C. Cir. 2016).

Section 101(c) of the Act has been interpreted by the Assistant Secretary to require a two-step analysis to determine whether the proposed modification of the application of a mandatory safety standard is proper, and is described as follows:

[T]his provision calls for a **two-step analysis** of any proposed modification. The first step, corresponding to Section 101(c)'s "**result**" clause, requires the Assistant Secretary to find that the **proposed alternative method will promote the same safety goals as the original standard with no less than the same degree of success**. The second step, keyed to Section 101(c)'s "**same measure of protection**" requirement, contemplates a more global inquiry into the net safety effect of the modification. **Taking into account both advantages and disadvantages of the alternative method, including effects unrelated to the goals of the original standard**, the Assistant Secretary must consider how the modification will affect the *overall* mine safety.

(emphasis added). Int'l Union, United Mine Workers of Am. v. MSHA [S. Ohio Coal], 928 F.2d 1200, 1202 (D.C. Cir. 1991); see Rosebud Mining, 827 F.3d at 1093-94; see also Int'l Union, United Mine Workers of Am. v. MSHA [Cypress Emerald], 920 F.2d 960, 963-64 (D.C. Cir. 1990) (noting the "result" clause requires that the modification promote "the specific safety goals of the original standard with roughly

comparable success," and therefore, requires an evaluation of the safety benefits resulting from the standard and the safety benefits resulting from the alternative method. While the "same measure of protection" clause requires determining whether the modification achieves "a net gain in mine safety (or at least equivalence), taking all effects into account.").

However, the two-step analysis does not require the mine operator to show that the alternative method "utilize[s] the same method of protection provided for in the standard." Emerald Mines Co. v. Int'l Union, United Mine Workers of Am., 83-MSA-17, decision of Ass't. Secretary O'Neal, at 7-11 (Sept. 22, 1989), aff'd in part and rem. in part, 920 F.2d 960 (D.C. Cir. 1990); Int'l Union, United Mine Workers of Am. v. MSHA [Quatro Mining], 924 F.2d 340 (D.C. Cir. 1991).

If, after consideration of a petitioner's modification request, an administrative law judge determines modification is appropriate, the modification of the applicable safety standard becomes an enforceable standard for the at-issue mine, unless an appeal is filed with the Assistant Secretary of Labor for Mine Safety and Health. 30 C.F.R. § 44.50; see Int'l Union, United Mine Workers of Am. v. MSHA [Utah Power & Light], 262 U.S. App. D.C. 200, 823 F.2d 608, 610 (1987). Only a decision by the Assistant Secretary shall be deemed final agency action for purposes of judicial review. 30 C.F.R. § 44.51.

Here, as discussed in the original Decision and Order, Petitioner's petition for modification is two-fold. Petitioner seeks modification on the basis of asserting it has provided an alternative method to achieve the same measure of protection afforded by the standard set forth in Section 75.1713-1(b). Alternatively, Petitioner contends the safety regulation codified in Section 75.1713-1(b) results in a diminution of safety at its Sufco Mine. Given the foregoing, the undersigned will again address each of Petitioner's contentions in seriatim. See D&O, p. 32.

A. Alternative Method

At the Sufco Mine, the Four East Portal escapeway terminates at the Four East Fan Portal which is located by a canyon and inaccessible to land-traveling vehicles, including that of emergency ambulance services. Nevertheless, the safety regulations pursuant to 30 C.F.R. § 75.1713-1 requires that mine operator's make arrangements for emergency medical assistance and transportation for injured persons, and, in part, states the following:

(b) Each operator of an underground coal mine **shall make arrangements with an ambulance service**, or otherwise provide, for **24-hour emergency transportation for any person injured at the mine**.

30 C.F.R. § 75.1713-1(b) (emphasis added).⁴⁹

As previously discussed in the original Decision and Order, Petitioner sought to modify the safety standard codified at 30 C.F.R. § 75.1713-1(b), due to the Four East Fan Portal's inaccessibility to land-traveling vehicles. In the alternative to compliance with Section 75.1713-1(b) at the Four East Fan Portal terminus of the alternate escapeway, Petitioner proposed, among other things, to: 1) Construct and maintain a safehouse at the Four East Fan Portal with electrical power, communication capabilities, food and water, and various medical supplies; 2) Petitioner would construct and maintain a helipad at the Four East Fan Portal for helicopter access and/or transportation from the Mine to a hospital or ambulance; 3) provide the landing coordinates of its helicopter landing facility; and 4) Coordinate with the Sheriff of Sevier County concerning the requirements for use of the UDOPS helicopters.

As noted above, Section 101(c) sets forth a two-step analysis to determine whether Petitioner's proposed alternative method is sufficient. The first-step, also known as the "result" clause, requires a finding that the proposed alternative method will promote the **same safety goals as the original standard with no less than the same degree of success**. While the second step, the "**same measure of protection**" clause, requires the fact-finder to determine how the proposed modification will affect **overall** mine safety, **taking into account both advantages and disadvantages of the alternative method, including effects unrelated to the goals of the original standard**. See 30 U.S.C. § 811(c); see also S. Ohio Coal], 928 F.2d at 1202; Rosebud Mining, 827 F.3d at 1093-94; Cypress Emerald, 920 F.2d at 963.

1) Same Safety Goals With No Less Than The Same Degree of Success

In my original Decision and Order, I found Petitioner's proposed alternative method fell short of **promoting the same safety goals as Section 75.1713-1(b) with no less than the same degree of success**. In doing so, I found Petitioner's proposed combination of a safehouse, helipad, and helicopter rescue service would be beneficial to miners working at Petitioner's Mine. I further found it was "possible" that miners at the Sufco Mine could receive more expedient medical care if transported by helicopter. However, I concluded that despite any potential benefits, Petitioner **could not guarantee 24-hour emergency transportation with no less than the same degree of success** because Petitioner's safehouse, alone or in combination with the proposed helicopter service, could not provide 24-hour emergency transportation

⁴⁹ As noted by the Deputy Administrator for Coal Mine Safety and Health, Section 75.1713-1(b) contemplates emergency medical services that "must be arranged for and be **readily available round-the-clock**." See Canyon Fuel Company, Proposed Decision and Order, Docket No. M-2015-015-C, slip op. at 3 (June 7, 2016).

to any injured person at the Mine.⁵⁰ In addition, I further concluded that Intermountain Life Flight, as well as the UDOPS helicopter service could not provide 24-hour emergency transportation for any injured person at the Mine because of possible weather limitations, competing obligations, and limited aircraft and staff.

On remand, I have considered all of the new factual information set forth by Petitioner and MSHA, however, my previous finding that Petitioner's alternative method falls short, remains the same. Despite additional development of information regarding emergency transportation, road conditions, and climatological data, I find Petitioner's proposed safehouse, helipad, and helicopter rescue services cannot guarantee **24-hour emergency transportation with no less than the same degree of success.** See S. Ohio Coal, *supra* at 1202; see also Cypress Emerald, *supra* at 963-64. As will be discussed below, when compared with the original standard, the proposed alternative method of helicopter services are more limited in their availability and ability to work in various weather conditions that prevent such services from being available for 24-hour emergency transportation.

a. Proposed Helicopter Services

With respect to Petitioner's proposed helipad and helicopter services, both Mr. Bowman and Mr. Bastian testified that neither the UDOPS helicopters nor ILF contract their services with any public or private entity, rather such services are provided on a first-come, first serve basis.⁵¹ In 2018, the UDOPS flight crews completed 213 missions, whereas Mr. Bastian testified ILF spends 3,000 hours completing 600 missions annually.⁵² ILF has five helicopters, at five

⁵⁰ In the first formal hearing, Mr. Leaming testified that although the safehouse would be stocked with a wide variety of medical supplies, it would not be manned by any of the Mine's EMTs, intermediates, or paramedics, nor would it be capable of providing medical care for severe traumatic injuries. (D&O, p. 35).

⁵¹ Mr. Bowman testified there were four helicopter services including the UDOPS, ILF, AirMed, and Classic Helicopter Services that all provide transportation services in the State of Utah. (Tr. 32). However, only representatives from the UDOPS and ILF testified, thus the undersigned will not presume any facts concerning AirMed or Classic Helicopter Services' flying capabilities in inclement weather, number of aircrafts, or availability of services.

⁵² Even though the UDOPS only completes 213 missions per year, the undersigned presumes that such missions have the potential to last hours or even days when searching for and rescuing people (i.e., hikers) lost in the natural terrain. Indeed, Mr. Bowman explained that the UDOPS flight crew was searching for five to six days for an individual in Summit County when they received a call to retrieve nine people who were trapped due to flooding from fires. Consequently, the UDOPS flight crew left the search for the individual in Summit County in order to retrieve the nine people. Thereafter, they returned to Summit County to resume their search and rescue. (Tr. 48).

different locations, the closest of which is the Provo, Utah location (a 45 minute flight), while aircrafts in Salt Lake City and Roosevelt would take 55 minutes to reach the Mine, and it takes a crew 15 minutes to prepare for any flight. In contrast, the UDOPS only has two helicopters, both of which are in Salt Lake City, approximately a 55 minute flight to the Mine.⁵³ ILF will fly injured persons directly from the Mine to nearby hospitals (20 minute flight), while the UDOPS helicopters will meet ambulances at a rendezvous point in order to transfer injured persons to a hospital. Thus, using the UDOPS helicopter service still requires either other helicopters or ambulances be available for emergency transportation to area hospitals. The UDOPS helicopters can carry one pilot, one flight officer, and two to three additional people, while the ILF helicopters may transfer only one person at a time.

Neither Mr. Bowman nor Mr. Bastian could guarantee that the UDOPS and ILF helicopters would be available for 24-hour emergency transportation at the Mine. Mr. Bowman testified the UDOPS flight crew supports local, federal, and county agencies in search and rescue missions in all 29 counties in the State of Utah. (D&O, p. 22). In addition, the local Sheriff's office would have to initially decide whether it was even appropriate to contact the UDOPS, prior to the UDOPS flight crew being deployed. (D&O, p. 27). Mr. Bowman explained simultaneous calls for assistance are prioritized by the pilot and flight crew, and Mr. Bowman prioritizes calls by considering whether there are injuries, the number of people who need assistance, and weather conditions. Mr. Bowman stated that "periodically" the UDOPS has competing missions, which may occur three to four times per year.⁵⁴ Mr. Bowman explained that Saturdays are the UDOPS' busiest day with the flight crew receiving three to four calls, however, the calls are spread out throughout the day. Mr. Bowman confirmed that if the UDOPS helicopter crew is unable to complete a mission because of competing obligations, Mr. Bowman will suggest other helicopter services who could be of assistance. Likewise, Mr. Bastian testified "often" there are times ILF has competing requests for its services, and it prioritizes calls based on whether it is a call for a "stable" patient (i.e., transferring a patient to another hospital) or a "scene" call where a person is seriously injured in an accident. In order to receive assistance from ILF, an individual must call 911, who will in turn contact ILF's communication center for help or Petitioner could call ILF's communication center. Depending on the nature of the call, ILF will dispatch its closest helicopter for each call. Due to competing obligations, Mr. Bastian stated ILF consistently refers

⁵³ The parties stipulated the UDOPS helicopter crews operate on an on-call basis at night and on the weekends, so response time to any request for assistance would require additional time for the flight crew to reach the UDOPS hanger. (JX-2). The actual time required for crew members to reach the hanger is unknown.

⁵⁴ In contrast, during the first formal hearing in this matter, Mr. Bowman testified there were "often" multiple requests for assistance from various counties in the State. (D&O, p. 25).

calls to other helicopter transportation services, which usually occurs at a rate of five times per month.

Both Mr. Bowman and Mr. Bastian confirmed that helicopters are restricted from flying in inclement weather such as winds above 55 knots, inversions, fixed snow, lightning, and low visibility. Mr. Bowman and Mr. Bastian confirmed that pilots and the flight crews monitor changing weather and determine whether or not it is safe to fly, and in the event weather worsens, a mission will be terminated. Nonetheless, Mr. Bowman stated that "very seldom" does weather prohibit the UDOPS flight crew from completing a mission, and since the beginning of 2018, there were no missions that the UDOPS crew was unable to complete due to weather. Mr. Bowman confirmed that in 2018, there were three missions that were delayed for an hour due to weather. If there is severe weather conditions, Mr. Bowman stated he may have to divert the route or wait for storms to pass, which usually takes less than one-half of one day. The UDOPS helicopters can operate at night with night vision goggles, and can also operate a hoist during night missions.

On the other hand, Mr. Bastian stated there were approximately 30 to 40 times per year, which was a conservative estimation, in which ILF was not able to respond to calls due to weather. When calls come in during inclement weather, Mr. Bastian confirmed ILF simply turns down the calls and does not fly. Mr. Bastian testified that last year (in 2017), from January through March, ILF completed 30 IFR flights, which requires an instrument flying aircraft, because they have helicopters equipped to fly in an "instrument environment." Nonetheless, there were a small percentage of flights ILF could not complete due to icing conditions or there was an area ILF could not travel to because there was no "instrument approach."

High Winds & Wind Gusts

The climatological data gathered by Mr. Risch demonstrates steady winds at the Sufco Mine were not estimated to reach speeds above 40 mph, but wind gusts could exceed such speeds during winter and spring months. Mr. Risch found steady winds from Provo to Salt Lake City to Ogden are generally below 40 mph, however, for short periods of time wind speeds in excess of 40 mph do occur. Conversely, Mr. Risch stated wind gusts above 40 mph occur more frequently in these areas, but occur "mostly under 10 hours per month (at or less than 1 percent of the time each month). (PX-23).

Mr. Bowman stated the UDOPS helicopter will not fly in winds above 55 knots, and a gust spread of 25 knots, where the difference between the minimum and maximum gusts of wind is more than 25 knots, may prevent the UDOPS helicopters from flying or cause termination of a flight.⁵⁵ Mr. Bastian testified that high winds can prevent ILF from

⁵⁵ The parties stipulated the UDOPS' helicopters were limited to "about 50 knots of wind or a gust spread margin of 25 knots." (JX-2).

flying, but in the six years Mr. Bastian has worked for ILF, high winds have not prevented him from flying. During tornadoes or when there are high gusts of wind (50 to 60 knots), ILF will not fly. If wind velocity exceeds 50 to 60 knots, Mr. Bastian stated the ILF pilot may exercise discretion as to whether the flight should continue.⁵⁶

Low Visibility and Inversion

Mr. Risch opined the estimate for periods of visibility below 1,000 feet at the Mine were between 9 and 28 hours per month and equates to 1.3 to 3.9 percent of the time between September and May. Nevertheless, Mr. Risch stated the aforementioned estimate drops considerably during the months of June through August with an estimate of zero to four hours (less than one percent per month) being expected. With respect to visibility in the "metro area," Mr. Risch concluded it was similar to that of the Skyline site (near the Sufco Mine), in that during the winter months there are more hours when visibility is under 1,000 feet. Nevertheless, at most, during the winter months there is approximately 30 to 32 hours per month that visibility is less than 1,000 feet (or 4 percent of the time).

The UDOPS helicopters can fly in one-half mile or more visibility and an 800 foot ceiling during the day, and a 1,000 foot ceiling and one mile visibility at night. Conversely, ILF helicopters may fly in visibility of 3 miles or above, and with a 1,000 foot ceiling or above. Mr. Bastian testified that in the event visibility is low, he can fly using instruments, and that last year, from January through March, ILF completed 30 IFR flights, which required an instrument flying aircraft. Mr. Bastian testified he is familiar with the general area of Petitioner's Sufco Mine, and in his opinion, the only physical condition other than weather conditions that would prevent him from flying in the region would be the "ceiling" height.

In the event of inversion, Mr. Bowman conducts an instrument takeoff until the helicopter rises above the inversion. Mr. Bowman testified that one of the biggest delays the UDOPS flight crew encounters are inversions, which occur more frequently in January and February. Nevertheless, when inversions occur it is usually clear everywhere else and there are no storms. Therefore, once the UDOPS helicopter rises above the inversion it is clear and missions may be completed. Mr. Bastian confirmed that, like the UDOPS flight crew, ILF helicopters also encounter "inversions" when flying in Salt Lake City, which is why ILF transitioned from a visual flight program to an instrument flight program, thus permitting flying during inversions.

Lightning and Thunderstorms

Mr. Risch did not issue any findings regarding lightning or thunderstorms in his climatological report. However, both Mr. Bowman

⁵⁶ However, the parties stipulated ILF helicopters may not fly in wind velocities in excess of 45 mph. (JX-2).

and Bastian stated they could not fly helicopters in lightning or thunderstorms with sustained winds in excess of 50 to 60 knots. Nevertheless, Mr. Bowman testified that if there is any lightning it is usually in a centralized area and the aircrafts have radar systems that enable them to detect weather patterns, which allows him to fly around the storms or wait for the storm to pass before landing in an area.⁵⁷

Icy Conditions and Snow

Mr. Risch opined the snowfall data indicates that in the Sevier Valley snow can fall from September to May, with more significant snowfall (over 3 inches) occurring from December to March. Annual snowfall in the Sevier Valley averaged from 15 to 25 inches. Mr. Bowman stated that during snow storms, the UDOPS flight crew may have to divert its route or wait for a storm to pass, but it will usually take less than one-half of one day before they can fly. Mr. Bowman stated the worst of the snow storms comes in the months of January and February, with less snow in November and December. Fixed snow (really thick snowfall) can prevent the UDOPS flight crew from flying. Mr. Bastian testified that snow, rain, and smoke would not prevent ILF from flying as long the visibility is such that pilots can see. However, Mr. Bastian stated ILF helicopters cannot fly in "ice" conditions.

b. Ground Transportation

As discussed above, Sevier County is the only ground transportation immediately available to the Mine. Sevier County has nine ambulances (two-wheel vehicles) located 35 to 58 miles away from the Mine, which would also provide assistance to the Mine on a first-come, first-serve basis. Sevier County employs 10 paramedics and 80 EMTs, running four full crews each day with additional on-call personnel. Each ambulance typically has two EMTs. On average, Sevier County only has 120 to 140 calls per month. The ambulances can carry one critically injured person, and at most two people with less severe injuries.

In terms of availability, the emergency ground transportation has less competing obligations than that of emergency air transportation, with the Salina area (with three ambulances) only receiving on average one call per day, the Richfield area (with four ambulances) receiving approximately two calls per day, and the Monroe area (with two ambulances) receiving about one call per day. Moreover, unlike the UDOPS and ILF flight crews, the Sevier County ground transportation does not receive call for assistance that traverse the entire State of Utah.⁵⁸

⁵⁷ It is unknown whether ILF helicopters have radar systems which enable them to fly around storms or lightning.

⁵⁸ The UDOPS helicopter crew uses two helicopters to service all 29 counties in the State of Utah, while ILF has five helicopters, with one helicopter

Other than potential weather conditions affecting road travel, such as snow and ice, there does not appear to be any other conditions that would prevent ground transportation from reaching the Mine. The UDOT has seventeen plows to clear I-70, the major interstate leading to the Mine, seven of which are in Salina, Utah, and are dispatched to clear the Interstate between Salina and the Mine. The parties stipulated it would be "rare" that I-70 and Sevier County Road are closed, but it may occur. Mr. Smith testified that once or twice a year parts of I-70 may be shut down due to inclement weather, and Mr. Leaming testified roads leading to the Mine may become impassible during the winter months for a matter of hours (three to five times per year during a severe winter). Notwithstanding the foregoing, Mr. Leaming could not recall there ever being a time during which an ambulance has not been able to leave or reach the Mine due to inclement weather conditions, rather ambulances had to reduce their speed when driving to the Mine. With respect to the Sevier County Road leading to the Mine, Mr. Smith testified Petitioner has snow plows to maintain the road, and on one occasion he was unable to reach the Mine because he was driving a Honda Accord (two-wheel drive vehicle). Nevertheless, Mr. Smith caught a ride with another employee in a four-wheel vehicle that was able to travel Sevier County Road. That being said, Sevier County, as well as Petitioner's ambulance, are two-wheel drive vehicles, and as such, there is a risk that the ambulances might not be able to travel the Sevier County Road if covered in snow and/or ice.

However, in addition to Sevier County ambulances, Petitioner has its own ambulance which is parked only 100 yards away from the West Lease Fan Portal.⁵⁹ Therefore, even if Sevier County ambulances could not immediately reach the Mine, Petitioner's ambulance could transport one severely injured person or two people with minor injuries to a local hospital or Petitioner's ambulance could meet one of Sevier County's ambulances in route to the hospital (if the West Lease Fan Portal is used as an alternate escapeway).⁶⁰

Based on the aforementioned discussion, although I find the UDOPS and ILF helicopter services are less limited than originally thought to be, I am not convinced that Petitioner's proposed safehouse, helipad and helicopter transportation services can **promote the same safety goals as Section 75.1713-1(b) with no less the same degree of success.** Initially, I find that it is disputable as to whether Petitioner would be able to provide **24-hour** emergency transportation

stationed in various places in Utah, including Provo, Salt Lake City, Ogden, St. George, and Roosevelt. (JX-2).

⁵⁹ Notably, Mr. Bowman previously testified in the first formal hearing in this matter, that he could not land a helicopter at the main entrance of the Mine because it contains overhead wires and there are cars parked in the area. (D&O, pp. 24-25).

⁶⁰ Mr. Leaming estimated Petitioner's ambulance is used six times per year to transport injured miners to the hospital. (Tr. 253).

either by ground ambulance or by air transportation, because both forms of transportation may at various times be precluded from reaching the Mine due to unpredictable inclement weather and availability. While Mr. Risch provided climatological data accumulated from a three-year period that indicates excessive wind velocity and gusts, and low ceilings and low visibility do not occur at a high percentage of the time (in the areas covered by his report), weather can be precipitous in nature and unpredictable. Also capricious, is the occurrence of competing calls for both air and ground emergency transportation, and Petitioner is unable to contract with any of the companies or state/county services in order to **guarantee** 24-hour transportation services in the event of an emergency at the Mine. Rather, the only 24-hour transportation that Petitioner could **arguably guarantee** in an emergency situation is Petitioner's ambulance, which is located 100 yards from the West Lease Portal.⁶¹

Notwithstanding the foregoing, I find Petitioner's proposed air transportation is more limited by weather conditions (i.e., low visibility, low ceilings, inversion, high winds and wind gusts, fixed snow, ice, and lightning) than that of ground transportation (i.e., snow and ice). Additionally, air transportation may face year-round travel limitations due to inclement weather, while ground transportation would encounter difficulty in traveling just during the winter months. Mr. Bowman testified he often completes missions, even in inclement weather, by waiting "an hour or so" for storms to pass, however, ground transportation would not face such delays in the case of inversion, high winds, low visibility or low ceiling, lightning, or thunderstorms. Indeed, Mr. Bastian estimated there were approximately 30 to 40 times per year ILF was unable to respond to calls for assistance due to weather conditions. Moreover, when asked whether he could land a helicopter by the Four East Fan Portal in the event of a mine explosion causing tremendous smoke and outgassing, Mr. Bowman stated he could not land "in that exact vicinity." Thus, it is questionable whether the UDOPS or ILF helicopters could rescue injured miners at the Four East Fan Portal in a mine event creating heavy smoke and outgassing. Lastly, although it is clear that both UDOPS and ILF helicopter flight crews have capabilities of flying at night, the UDOPS is the only helicopter service that can hoist people during night missions, whereas ILF cannot do so.

⁶¹ The undersigned recognizes that like other transportation services, Petitioner's ambulance would also have to possibly travel through inclement weather conditions, and traverse Sevier County Road #6008 and I-70 in order to reach area hospitals. However, Mr. Leaming, who worked at the Sufco Mine for 44 years, testified he did not recall a time during which an ambulance was unable to leave or reach the Mine due to weather conditions. (Tr. 249). On this basis, the Sufco Mine appears to have relied solely on emergency ground transportation during the entirety of its operations, but Petitioner presented no evidence demonstrating ambulances were unable to leave or reach the Mine. Thus, despite the varying terrain of Sevier County Road #6008, I find Petitioner has been able to effectively provide emergency ground transportation for its injured miners.

I also find the proposed aircraft transportation has a higher demand for assistance than that of ground transportation. Both the UDOPS and ILF services (consisting of a combined number of 7 helicopters) only complete 40 missions per month (480 missions per year) and 50 missions per month (600 missions per year), respectively. That notwithstanding, both helicopter services complete missions throughout the State of Utah, and the UDOPS completes a variety of missions including search and rescue that could take several hours or days to complete.⁶² On the other hand, Sevier County has nine ambulances that only service the county and average just one to two calls per day for emergency transportation. Further, the UDOPS helicopters do not transport injured persons to hospitals, but instead depend on other emergency air or ground transportation to do so. Consequently, even if, for example, the UDOPS helicopters were available to transport two to three injured persons from the Four East Fan Portal terminus, but other air or ground transportation is unable to meet the UDOPS helicopter at a rendezvous point, injured persons will not be transported to an area hospital. Thus, ILF is the only helicopter service that could transport injured persons (one at a time) from the Four East Fan Portal terminus directly to area hospitals.⁶³ Nevertheless, ILF has only three helicopters within a 35 minute to 1 hour and 15 minute flight (i.e., Provo, Ogden, and Salt Lake City) to the Mine, and it "often" has competing obligations which results in ILF referring people to other helicopter services at a rate of five times per month. Moreover, if an ILF helicopter is unable to land on Petitioner's proposed helipad, it may use its hoist to remove people, but ILF cannot do so during night missions.

Furthermore, Petitioner has consistently argued that use of emergency air transportation will result in injured miners receiving more expedient medical care. This would be true if ILF is waiting for an injured person to exit the Four East Fan Portal because Mr. Bastian confirmed it would only take 20 minutes to reach the local hospitals, whereas ground transportation would take approximately 45 minutes to reach any area hospital.⁶⁴ However, in the event injured persons had already exited the Mine, Sevier County ambulances could reach the Mine in 35 minutes, along with a 45 minute drive to area hospitals (80 minutes total). On the other hand, if UDOPS were to fly from Salt Lake City to the Mine it takes 55 minutes just to reach the Mine, in addition to any time it takes to meet an ambulance at a rendezvous point, transfer the miner to the ambulance, and then drive the miner to the hospital.⁶⁵ Similarly, it would take ILF 15 minutes to prepare

⁶² See supra note 52.

⁶³ See supra note 51.

⁶⁴ Mr. Smith testified that typically a miner is working underground, five to six miles from the surface of the Mine, and that transportation inside the Mine is governed by a 25 mph speed limit. Therefore, Mr. Smith concluded it would take time for miners to exit the Sufco Mine. (Tr. 211-12).

⁶⁵ This is also assuming the UDOPS flight crew is at the hanger, and not on-call, which would require additional time for the crew to reach the UDOPS hanger.

for flight, and approximately 35 minutes to 1 hour and 15 minutes (depending on the location of the helicopter) to reach the Mine, along with a 20 minute flight to local hospitals. Thus, assuming there are no weather delays and the helicopter is available, the only ILF helicopter that could reach the Mine and transport an injured miner to a hospital in less time (70 minutes) than that of Sevier County ambulances would be an ILF helicopter flying out of the Provo, Utah location. Also noteworthy, is the availability of Petitioner's ambulance, which is readily available by the West Lease Fan Portal of the Mine. Upon egress from the Mine, Petitioner's ambulance could quickly transfer an injured miner(s) to Sevier County ambulances at milepost 1 or milepost 10 along Sevier County Road #6008, or Petitioner's ambulance could drive directly from the Mine to local hospitals within 45 minutes.

Accordingly, on remand I find and conclude Petitioner's proposed alternative method does not **promote the same safety goals as Section 75.1713-1(b) with no less than the same degree of success.** See S. Ohio Coal, supra at 1202; see also Cypress Emerald, supra at 963-64. Even when combined with a safehouse and use of a helipad, with the proposed use of helicopter transportation Petitioner cannot **guarantee 24-hour emergency transportation with the same degree of success as the original standard** due to additional weather restrictions and the level of demand and/or competing obligations. Applying the original standard, Petitioner can, at the very least, guarantee the availability of 24-hour emergency transportation by use of its own ambulance. Moreover, the Sevier County ambulances are less limited by weather conditions and demands for assistance than that of its air counterparts. On the other hand, Petitioner's proposed modification cannot guarantee that the UDOPS or ILF helicopters will be able to reach the Mine or be available for "round the clock" transportation.

2) Advantages and Disadvantages of the Alternative Method

In the original Decision and Order, after considering the **advantages and disadvantages of the alternative method**, I found Petitioner had not met its burden in showing its proposed alternative method provides a **net gain or at least equivalence in overall mine safety** because Petitioner could not provide 24-hour emergency transportation from the Four East Fan Portal terminus.⁶⁶ In doing so,

⁶⁶ In the initial Decision and Order, the undersigned spent considerable time discussing the suitability of the escapeways in light of Petitioner's proposed modification. See (D&O, pp. 30-46). However, the Secretary stated that the only standard at issue in the present petition for modification is 30 C.F.R. § 75.1713-1(b), relating to the provision of medical services upon egress from the Mine. He further stated the standard involving the suitability of escapeways pursuant to 30 C.F.R. § 75.380(d)(5) was not before him. (Secretary's D&O, p. 14 n.5). Indeed, the United States Tenth Circuit Court of Appeals, within whose jurisdiction this case arises, recently considered the suitability of Petitioner's Four East Fan Portal escapeway as compared to the West Lease Fan Portal alternate escapeway under Section 75.380(d)(5). See Canyon Fuel Co., LLC v. Sec'y of Labor, 894 F.3d 1279

I not only considered Petitioner's proposed safehouse, helipad, and helicopter service, I also considered all of the safety benefits in implementing Petitioner's modification versus employing the standard required by Section 75.1713-1(b), which involved deliberation of the safety benefits of using the Four East Portal versus the West Lease Portal as alternate escapeways. For purposes of efficiency, I incorporate the discussion in the initial Decision and Order regarding these issues as well. See (D&O, pp. 38-43). Therefore, on remand, I will only address new factual information provided.⁶⁷

Since the last formal hearing in the instant case, Petitioner has obtained new factual information regarding air and ground emergency transportation which is fully discussed above. In addition, Petitioner has provided new information about the West Lease Portal, namely, that the number of overcasts in the Portal have been reduced from twelve to three overcasts close to "Crosscut 179." Mr. Leaming testified that the three overcasts at "Crosscut 179" are approximately 100 feet apart, which would require a miner to climb nine to ten feet over each overcasts, and continue walking 100 feet between each overcasts. Mr. Leaming explained that if vehicles were staged in the West Lease Fan Portal, the vehicles would have to be staged beyond the area of the three overcasts. Mr. Leaming estimated vehicles could be staged three miles from the entrance of the West Lease Fan Portal, which means miners would have to walk three miles before reaching the

(10th Cir. 2018). Consequently, the undersigned presumes the Secretary does not find consideration of Petitioner's escapeways to be relevant to the present petition. Notwithstanding the foregoing, I do not concur with the Secretary that the escapeways are not at issue in the instant case. Section 101(c) of the Act has been interpreted as requiring a two-step analysis, with the second step being identified as the "same measure of protection" requirement. The "same measure of protection" provision has been interpreted as necessitating consideration of whether modification achieves a "**net gain** (or at least equivalence) in **overall** mine safety," taking **all effects** into account. S. Ohio Coal, supra at 1202. Thus, it requires an evaluation of **all** safety benefits resulting from the standard and **all** safety benefits resulting from the alternate method. See id.; see also Cypress Emerald, supra at 963. Accordingly, it stands to reason, that while the suitability of escapeways do not pertain to Section 75.1713-1(b), the decision to implement (or not employ) Petitioner's proposed modification may bear on **overall** mine safety as granting Petitioner's modification would result in miners using the shorter and more direct Four East Portal as an alternate escapeway, but denying modification would require use of the longer West Lease Portal as an alternate escapeway. As discussed in great detail by the Tenth Circuit in Canyon Fuel Company, the distance to exit the Mine, the number of overcasts, the number of SCSR change-outs, and traveling in intake or return air have an impact on **overall** mine safety. See Canyon Fuel Company, supra at 1282-88. Therefore, the undersigned finds deliberation of both potential alternate escapeways to be appropriate in this portion of the Decision and Order.

⁶⁷ On remand, Petitioner did not present any new factual information about its proposed safehouse or helipad. Accordingly, the undersigned will not discuss in detail the safehouse or helipad, both of which were previously considered. See (D&O, pp. 38-43).

staged vehicles. Mr. Leaming testified that typically pre-staged vehicles would be single-cab pick-up trucks with a box on the back that holds supplies, which would allow miners to jump in the back of the pick-up truck as well, if the pick-up truck was still present when they arrived. More than one vehicle would be able to be pre-staged, but Mr. Leaming did not provide an exact estimate of the number of vehicles.

Notwithstanding the foregoing, Mr. Leaming believed that "staging vehicles . . . has serious flaws" because in an emergency not everyone is going to reach the staging area at the same time. Looking back at the "Willow Creek" incident, Mr. Leaming stated the staged vehicles were taken by the first group of people, which meant all the other people had to travel by foot. Thus, Mr. Leaming concluded "it [staging vehicles] is just not a practical thing to do."

With respect to miners traveling in return or intake air, Mr. Smith confirmed miners using the Four East Fan Portal as an alternate escapeway will be in return air, while miners using the West Lease Fan Portal would be in intake air (fresh air).

On remand, upon considering **both the advantages and disadvantages of the alternative method**, including an evaluation of **all** safety benefits resulting from the standard and **all** safety benefits resulting from the alternate method, I again find it does not achieve a result that will **at all times guarantee no less than the same measure of protection afforded by the Section 75.1713-1(b)**. Despite the development of new factual information concerning emergency air transportation, my previous finding that Petitioner's Four East Fan Portal may be the shortest, most direct route to the surface of the Mine remains the same. Moreover, my conclusion that Petitioner cannot provide 24-hour emergency transportation from the Four East Fan Portal terminus also remains unchanged. Cypress Emerald, 920 F.2d at 963; see (D&O, p. 43). Further, as will be discussed below, the new factual evidence regarding the West Lease Fan Portal, tends to suggest that it would be less arduous for miners to exit the Portal than before.

Undoubtedly, one advantage or benefit of Petitioner's proposed alternative is that, assuming weather conditions were perfect and an aircraft was waiting for injured miners upon exiting the Four East Fan Portal escapeway, the emergency air transportation, namely ILF,⁶⁸ could reach area hospitals within 20 minutes as compared to ground ambulance which could take approximately 45 minutes to reach either the Sevier Valley Medical Center or the Gunnison Valley Hospital. Another advantage to Petitioner's proposed alternative would be that the UDOPS

⁶⁸ On the other hand, the UDOPS helicopters do not transport injured persons to area hospitals, but instead meet ambulances at rendezvous points to transfer people into ambulances. (Tr. 57-58). Therefore, while the UDOPS helicopter may be able to quickly remove miners from the Four East Fan Portal terminus, it would not necessarily provide for faster transport to hospitals.

helicopters could transfer two to three people at one time from the Four East Fan Portal to a rendezvous point to transfer injured persons into ambulances. Further, Mr. Bowman stated he could hoist people out of an area, at a rate of ten people in ten to twenty minutes, which could be done during day and night operations.⁶⁹ Therefore, use of air emergency transportation services could permit for more expedient emergency transportation from the Mine to a local hospital, as well as potentially transporting more miners (at one time) away from the immediate area of the Mine (i.e., the Four East Fan Portal terminus) in order to meet emergency ground transportation.

Conversely, one disadvantage of Petitioner's proposed alternative method, is that the UDOPS and ILF air transportation are arguably more limited in its ability to operate due to multiple weather conditions, and as such, may encounter delays or be unable to fly because of high velocity winds and wind gusts, inversions, low ceiling and low visibility, lightning, thunderstorms, ice, and fixed snow. Mr. Bowman stated that the UDOPS helicopters are "very seldom" unable to complete a mission due to weather conditions, but in 2018, there were three missions that were delayed for an hour due to weather. Conversely, Mr. Bastian stated there were approximately 30 to 40 times per year, which was a conservative estimation, in which ILF was not able to respond to calls due to weather. Both Mr. Bowman and Mr. Bastian confirmed that flights may be terminated during a mission due to inclement weather, thus flights may be terminated in route to provide assistance.

The second disadvantage is the competing interest of the helicopter services as the UDOPS helicopter crew provides its services to the entire State of Utah (29 counties), while ILF has five helicopters stationed throughout Utah and provides services to surrounding areas. Mr. Bowman stated that "periodically" the UDOPS has competing missions, which may occur three to four times per year. Moreover, the UDOPS helicopter service is not automatically deployed in the event of an emergency at Petitioner's Sufco Mine. Instead, the Sheriff of Sevier County would initially have to determine whether it is appropriate to contact the UDOPS, and only after the Sheriff makes this determination would UDOPS be contacted. Mr. Bowman confirmed that if the UDOPS helicopter crew is unable to complete a mission because of competing obligations, Mr. Bowman will suggest other helicopter services who could be of assistance. Likewise, Mr. Bastian testified "often" there are times ILF has competing requests for its services, and it prioritizes calls based on the medical condition of people in need of assistance. However, due to competing obligations, Mr. Bastian stated ILF consistently refers calls to other helicopter transportation services, which usually occurs at a rate of five times per month. Notwithstanding some of the benefits of air

⁶⁹ In contrast, the ILF helicopters usually only transport one injured person at a time, but ILF helicopters cannot use a hoist during night missions. (JX-2).

transportation, it is arguably more limited in its operations due to weather conditions, and has statewide demands for services.

Nevertheless, if Petitioner's proposed modification were granted, it would necessarily result in the miners exiting the Mine using the Four East Portal, which is the shortest, most direct exit (2.34 miles) to the surface of the Mine, thus allowing miners to "possibly" receive medical treatment sooner than if exiting the West Lease Portal. However, the Four East Portal has five overcast crossings and two SCSR change-outs and requires miners to travel in return air, which may potentially expose them to toxic gases or other fumes. See (D&O, p. 41).

In contrast to Petitioner's proposed modification, the primary advantage or benefit of the standard is that upon egress from the Mine, miners would have access to 24-hour transportation, at the very least, by using Petitioner's ambulance which is stationed 100 yards from the entrance of the West Lease Portal. Additionally, Sevier County has nine ambulances that provide service to the Mine and surrounding area. As discussed above, the ambulances may be faced with travel delays on I-70 or Sevier County Road #6008 during severe winter storms due to snow or ice. Nonetheless, unlike air transportation, the ground emergency transportation is not limited by high winds and gusts of wind, low visibility and low ceilings, inversion, lightning, or thunderstorms. Mr. Leaming testified that during his 44 years of working at the Mine, he could not recall a time in which ground emergency transportation was unable to reach the Mine. Furthermore, Sevier County has nine ambulances that are located anywhere from 35 miles to 58 miles from the Mine, and on average, only receive one to two calls for assistance per day. Thus, emergency ground transportation is close in proximity to the Mine, and it does not have a high demand for assistance or provide statewide assistance, unlike the emergency air transportation.

In applying the standard, miners would have to travel to the surface of the Mine using the West Lease Portal, which requires miners to travel 5.88 miles to the surface and make five SCSR change-outs. However, the miners would be in intake air (or fresh air) while traveling to the surface. Initially, the West Lease Portal required miners to cross over 12 overcasts, but Mr. Leaming confirmed that the overcasts have since been decreased to just three overcasts, all of which are 100 feet apart. Furthermore, Mr. Leaming confirmed vehicles could be staged after the three overcasts, which means miners could potentially have to walk three miles before reaching the pre-staged vehicles, and thereafter, drive approximately three more miles to the surface of the Mine. Notwithstanding the foregoing, the undersigned notes that it is not known how many vehicles Petitioner could pre-stage in the West Lease Portal. Likewise, in a dire emergency situation it is quite plausible that miners who first reach the vehicles will not wait for other miners before driving out of the Mine.

Based on the foregoing discussion, just as in my original Decision and Order, the undersigned finds that neither Petitioner's proposed modification or application of the standard are ideal for **overall** mine safety. While the proposed modification **could** result in more expedient emergency transportation via air transportation and result in miner's being able to exit out of the shorter, more direct route to the surface (i.e., the Four East Portal), it cannot guarantee 24-hour emergency transportation due to unpredictable weather conditions and competing demands of emergency air transportation.⁷⁰ Furthermore, the Four East Portal has **five** overcasts that miners would have to traverse (possibly carrying injured miners), and miners would be traveling in **return** air which could contain toxic gases. Conversely, by applying the standard, miners would at the very least, have access to Petitioner's ambulance when they exit the West Lease Portal alternate escapeway. In addition, applying the standard results in miners exiting the Mine using the West Lease Portal, albeit the longer alternate escapeway, but it now has less overcasts (i.e., three) for miners to traverse than that of the Four East Portal escapeway, and has intake air which would allow miners to travel in fresh air. Further, it is possible to pre-stage vehicles in the West Lease Fan Portal, which could mitigate the effects of the longer distance. Nonetheless, the undersigned agrees that it is very possible miners who reach staged vehicles will not wait for other miners to arrive before exiting the Mine in an emergency situation. However, irrespective of the distance of each escapeway, the quality of air, and number of overcasts, Petitioner must be able to guarantee 24-hour emergency transportation, which it cannot do with its proposed air transportation.

Accordingly, in light of the foregoing discussion, I find that Petitioner has not met its burden by the preponderance of the evidence in showing its proposed alternative method provides a **net gain or at least equivalence in overall mine safety**. Petitioner cannot guarantee 24-hour emergency transportation from the Four East Fan Portal terminus by using its proposed air transportation. Cypress Emerald, 920 F.2d at 963. Moreover, considering all the safety benefits of Petitioner's proposed modification versus the safety benefits of the standard, the Four East Portal may be the shortest, most direct route to the surface, but miners would have to walk over five overcasts and in return air. Therefore, I do not find miners traveling the shorter distance of the Four East Portal necessarily results in an equivalence

⁷⁰ As observed by the Tenth Circuit in Canyon Fuel Company, supra at 1299-1300, the Secretary made little effort to present evidence comparing the underground conditions of the same two escapeway routes, and thus the record did not permit an assessment of the advantages of traveling the Four East Fan Portal route as opposed to the West Lease Portal Route. Id. at 1299. The benefits of exiting the Mine more quickly along the Four East Fan Portal route, "with a potentially indeterminate wait for transportation to medical facilities were not weighed against the benefits of receiving medical care more quickly, but first enduring a longer and possibly more difficult journey to exit the mine" along the West Lease Portal route. Id. at 1300.

or greater safety benefits than that of the West Lease Portal. Therefore, I find and conclude Petitioner has failed to meet its burden in demonstrating its proposed alternative method **at all times guarantees no less than the same measure of protection afforded by the standard.** 30 U.S.C. § 811(c); S. Ohio Coal, 928 F.2d at 1202.

B. Diminution of Safety

In contrast to the "alternative method" standard, the "diminution of safety" standard can be applied with relative ease. The "diminution of safety" standard requires the fact-finder **to ask only whether application of a particular mandatory safety regulation would be unsafe**; it is not necessary to balance the efficacy of the existing rule against the net benefits produced by the proposed modification. In sum, the "diminution of safety" standard **requires a comparison of only the safety level if the rule is applied with the safety level in the absence of the rule.** Moreover, the diminution in safety may not be directly related to purpose of the at-issue safety standard, but instead may result from the safety standard's effect on other aspects of mine safety. See Quatro Mining, 924 F.2d at 344; see also Rosebud Mining, 827 F.3d at 1093 n. 2.

On remand, Petitioner continues to argue the safety regulation codified in Section 75.1713-1(b) results in a diminution of safety because it precludes Petitioner's use of the Four East Portal alternate escapeway. Petitioner contends that because the Four East Portal is the shortest, most direct route to the surface of the Mine, it allows miners to more expediently remove themselves from underground mine hazards such as toxic gases, fires, and explosions. Petitioner also argues miners have a "greater probability" of receiving timely medical treatment exiting the Four East Portal than that of the West Lease Portal because use of helicopter emergency transportation at the Four East Fan Portal terminus will "likely" result in faster evacuations to a medical facility. Further, if miners are required to exit the Mine using the West Lease Portal it will require five SCSR change-outs as opposed to two in the Four East Portal, and it will take miners 9 to 10 hours to reach the surface while traveling the West Lease Portal which has a number of "turns and changes of direction." Therefore, Petitioner argues that by not allowing it to utilize the Four East Portal as an alternate escapeway, it prevents a ready escape from the Mine, and as a result, creates a diminution of safety.

Conversely, MSHA argues Petitioner has failed to demonstrate Section 75.1713-1(b)'s application results in a diminution of safety. MSHA concedes the suggested West Lease Portal escapeway is longer in distance to that of the Four East Portal escapeway. Nonetheless, MSHA asserts miners will travel in fresh air going through the West Lease Portal escapeway, rather than in return air in the Four East Portal. Additionally, MSHA contends Petitioner may pre-stage vehicles to allow for an expedited evacuation out of the Mine (after crosscut 179), which would permit miners to drive the "vast majority" of the West

Lease Fan Portal. On this basis, MSHA contends that the overcasts located before crosscut 179 must be crossed by miners whether they use the Four East Portal or West Lease Portal as an alternate escapeway, thus use of the Four East Portal is not necessarily less arduous to travel. Furthermore, irrespective of the time it takes for miners to exit the Mine utilizing the suggested West Lease escapeway, MSHA asserts that ultimately the Four East Portal escapeway results in a diminution of safety because Petitioner cannot guarantee 24-hour access to emergency transportation by use of the proposed air transportation.

Consequently, on remand, the issue remains whether the application of Section 75.1713-1(b) would diminish safety or negatively impact safety in Petitioner's Mine. Application of the standard would require miners to use the West Lease Portal as an alternate escapeway, which undoubtedly is 5.88 miles to the surface, with 5 SCSR change-outs, and three overcasts. Nonetheless, use of the West Lease Portal would allow miners to travel to the surface of the Mine in fresh (intake) air, and vehicles can be pre-staged after crosscut 179, which would allow miners to drive approximately 3 miles of the 5.88 miles to the surface. The undersigned acknowledges the possible limitations of staging vehicles, namely, that there may not be enough vehicles to transport all miners and other miners may not wait for co-workers before driving out of the Mine. There is also the issue of maintaining pre-staged vehicles such that they are always in a drivable condition. However, that notwithstanding, the West Lease Portal does, at the very least, provide access to 24-hour emergency transportation (i.e., Petitioner's ambulance) with added support from the Sevier County ambulances. Petitioner's ambulance is parked 100 yards from the West Lease Portal entrance, so it is always available for emergency transportation. Sevier County ambulances average only one to two calls for assistance per day and have ambulances within a 35-mile range from the Mine. Although the Sevier County ambulances may be delayed in travel or unable to travel during severe winter storms impacting I-70 or Sevier County Road #6008, Mr. Leaming testified he never recalled a time when an ambulance was unable to reach the Mine, rather they traveled at slow speeds to reach the Mine.

If, on the other hand, Section 75.1713-1(b) was not applied to Petitioner's Mine, Petitioner would be permitted to use the Four East Portal as an alternate escapeway and to provide air transportation, which I have already found cannot guarantee 24-hour emergency transportation. Thus, while the miners would have access to the shortest, most direct route to the surface, they would be in return air, and would have to crossover five overcasts, and ultimately would not have access to 24-hour emergency transportation.

Accordingly, I find and conclude that the application of 30 C.F.R. § 75.1713-1(b) does not result in a diminution of safety to the miners at the Sufco Mine. See Quatro Mining, 924 F.2d at 344; see also Rosebud Mining, 827 F.3d at 1093 n. 2. Although its application would require miners to use a longer alternate escapeway

(i.e., the West Lease Portal), the miners would have access to 24-hour emergency transportation. In contrast, without application of Section 75.1713-1(b), Petitioner cannot guarantee 24-hour emergency transportation to the miners using the Four East Fan Portal.⁷¹

Given the foregoing discussion and analysis, I find and conclude Petitioner is not entitled to modification of the application of the safety regulation codified at 30 C.F.R. § 75.1713-1(b).

VI. ORDER

IT IS HEREBY ORDERED that Petitioner's petition for modification under the **Federal Mine Safety and Health Act of 1977** is **DENIED**.

ORDERED this 31st day of May, 2019, at Covington, Louisiana.

LEE J. ROMERO, JR.
Administrative Law Judge

NOTICE OF APPEAL RIGHTS: To appeal, you must file a Notice of Appeal ("Notice") with the Assistant Secretary of Labor for Mine Safety and Health within thirty (30) days after service of the "Initial Decision" of the Administrative Law Judge. See 30 C.F.R. § 44.33(a). The Assistant Secretary's address is: Assistant Secretary for Mine Safety and Health, U.S. Department of Labor, 201 12th St South, Suite 401, Arlington, VA 22202-5450. Once an appeal is filed, all inquiries and correspondence should be directed to the Assistant Secretary.

At the time you file the Notice with the Assistant Secretary, you must serve it on all parties. See 30 C.F.R. §§ 44.6 and 44.33(a). If a party is represented by an attorney, then service must be made on the attorney. See 30 C.F.R. § 44.6(c).

If no Notice is timely filed, then the administrative law judge's "Initial Decision" becomes the final decision of the Secretary of Labor. See 30 C.F.R. § 44.32(a).

⁷¹ As further observed by the Tenth Circuit in Canyon Fuel Company, *supra* at 1300, "mining disasters come in different forms and it is no small burden to predict whether the next emergency would be best served by the fastest route to the surface or the fastest route to medical services," which is the issue that must be addressed in the instant case.