Billing Code: 4520-43-P

DEPARTMENT OF LABOR

Mine Safety and Health Administration

Petitions for Modification of Application of Existing Mandatory Safety Standards

AGENCY: Mine Safety and Health Administration, Labor.

ACTION: Notice.

SUMMARY: This notice is a summary of a petition for modification submitted to the Mine Safety and Health Administration (MSHA) by the parties listed below.

DATES: All comments on the petition must be received by MSHA's Office of Standards, Regulations, and Variances on or before [INSERT DATE 30 DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit your comments, identified by "docket number" on the subject line, by any of the following methods:

1. Electronic Mail: zzMSHA-comments@dol.gov. Include the docket number of the petition in the subject line of the message.
2. Facsimile: 202-693-9441.
3. Regular Mail or Hand Delivery: MSHA, Office of Standards, Regulations, and Variances, 201 12th Street South, Suite 4E401, Arlington, Virginia 22202-5452, Attention: Roslyn B. Fontaine, Deputy Director, Office of Standards, Regulations, and Variances. Persons delivering documents are required to check in at the receptionist's desk in

Suite 4E401. Individuals may inspect copies of the petition and comments during normal business hours at the address listed above.

MSHA will consider only comments postmarked by the U.S. Postal Service or proof of delivery from another delivery service such as UPS or Federal Express on or before the deadline for comments.

FOR FURTHER INFORMATION CONTACT: Roslyn B. Fontaine, Office of Standards, Regulations, and Variances at 202-693-9440 (voice), fontaine.roslyn@dol.gov (email), or 202-693-9441 (facsimile). [These are not toll-free numbers.]

SUPPLEMENTARY INFORMATION: Section 101(c) of the Federal Mine Safety and Health Act of 1977 and Title 30 of the Code of Federal Regulations Part 44 govern the application, processing, and disposition of petitions for modification.

I. **Background**

Section 101(c) of the Federal Mine Safety and Health Act of 1977 (Mine Act) allows the mine operator or representative of miners to file a petition to modify the application of any mandatory safety standard to a coal or other mine if the Secretary of Labor determines that:

1. 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

2. The application of such standard to such mine will result in a diminution of safety to the miners in such mine.

In addition, the regulations at 30 CFR 44.10 and 44.11 establish the requirements for filing petitions for modification.

II. Petition for Modification

Docket Number: M-2020-001-C.

Petitioner: Warrior Met Coal Mining, LLC.

Mines: Mine No. 4, MSHA I.D. No. 01-01247 and Mine No. 7, MSHA I.D. No. 01-01401, located in Tuscaloosa County, AL.

Regulation Affected: 30 CFR 75.1911 (Fire suppression systems for diesel-powered equipment and fuel transportation units).

Modification Request: The petitioner requests a modification of the existing standard to allow use of a water-based chemical fire suppression system (instead of a dry chemical system) and a fire monitoring system. The petitioner proposes to use the Fogmaker High-Pressure Water Mist Fire Suppression System ("Fogmaker System") manufactured by Fogmaker International AB for a variety of diesel equipment including track locomotives, track personnel carriers, outby forklifts, and outby shield haulers.

The petitioner states that:

(1) The two listed mines are both longwall mines that are geographically close, and use similar mining methods and equipment.

(2) Both mines operate in the Blue Creek coal seam located in Tuscaloosa County, Alabama, to produce coal.

The petitioner asserts that a water-based fire suppression system is to be used because it is as effective as a dry chemical system. In support of this view, the petitioner notes that the Fogmaker System has been certified by the Underwriters Laboratories (UL) and Factory Mutual (FM) standards. It has also received the following approvals: P-Mark SPCR 183, SP Test Method 4912 – SP Technical Research Institute of Sweden; American Public Transportation Association Compliant (APTA-BTS-BS-RP-003, APTA BTS-BS-RP-001-05); US Department

of Transportation Compliant (DOT 3AL 2216/DOT 173.306(f)); Transport Canada, Certificate #11140; AS5062, Australian Certification for Fire Suppression System on Transportable Machinery.

The petitioner asserts that the Fogmaker System meets all of the requirements specified under 30 CFR 75.1911, as follow:

(a) As an alternative to 30 CFR 75.1911(a), the water-based fire suppression Fogmaker System will be: (1) engineered and installed to end fires at an early stage; (2) approved by an independent laboratory, using strict testing standards; (3) able to meet engineering, construction, and operational requirements to cover water-based automatic extinguisher units made for total flooding applications; and (4) tested for its capability to detect and suppress fires, and monitor operational systems. The Fogmaker System is made up of: piston accumulator(s), release valve, connector for detection tube, detection bottle, safety valve, outlet for suppression fluid with protective plug, refilling connection for suppression fluid, bracket, clamp, gauge, safety screw, and 2G approved or braided stainless hoses.

(b) The Fogmaker System will achieve at least the same measure of protection afforded to the miners by mandatory standard 30 CFR 75.1911. The Fogmaker System meets the mandatory standard in the following manner: (1) The system creates cold-water fog that cools down the temperature and reduces the oxygen content, the effectiveness increases when fluid is vaporized due to contact with heated surfaces; (2) The piston accumulator and detection bottle are positioned in protective containers and in such a way so as to prevent damage; (3) The piston accumulator containing an Aqueous Film-Forming Foam Concentrate (AFFF) agent is pressurized with nitrogen to approximately 938 psi and then drops slowly to 218 psi when activated (pressure is maintained to ensure the entire contents are discharged); (4) The fire

suppression fluid is based on frost-protected water additives of a film-forming AFFF chemical that prevents the re-ignition of leaking fuel and improve suppression methods; (5) An engineering and safety risk assessment will determine the size of the piston accumulator, the lengths of houses and stainless tubes, and the number of nozzles; (6) The chemical is discharged through nozzles, atomizing the water to approximately 80 µm under high-pressure to blanket the fire, fuel source, and to prevent other fires from occurring; (7) The release valve is a hydro pneumatic, fully automotive valve, activated by fire detection.

(c) As an alternative to 30 CFR 75.1911(a)(1), the Fogmaker System will be engineered for the diesel equipment that it will be installed in. The systems will be specifically designed to follow the engine components as required by 30 CFR 75.1911(b): starter, hydraulic pumps and tanks, fuel tanks, and exposed brake units, air compressors, and battery areas. The Fogmaker System will comply with component specifications identified in the FM 5970 required standard to apply a total flooding approach. In addition, an engineering and safety risk assessment will be completed for each piece of diesel-powered equipment, prior to installation and deployment; this assessment will determine, for example, the protected volume required, the volume of the suppressant and size of the piston accumulator, the number and location of nozzles, and stainless tube lengths.

(d) As an alternative to 30 CFR 75.1911(a)(2), the following four components will be be installed according to the FM-approved installation manual – piston accumulator, detection cylinder, detection tube, and distribution tubing. For example, the piston accumulator and protection container will be installed to ensure a minimum of 6 inches of clearance at the end of the container so that there is enough space for approved hoses, braided stainless hoses, or any other approved cables/hoses.

(e) As an alternative to 30 CFR 75.1911(a)(3), the petitioner will use detailed instructions in the FM-approved installation manual to install the correct type and length of detection tubing and stainless distribution tubing for the distribution assembly. The instructions dictate the type and length of approved or braided stainless hoses, stainless tubing, the maximum distance between mounting points, the minimum bend radius, and other requirements to ensure the proper and secure mounting of hoses and tubing.

(f) As an alternative to 30 CFR 75.1911(a)(4), the petitioner will take into account the direct hazard and volume filling needs for total flooding in determining proper locations of nozzles. The design of the equipment specific instillation will be based on these engineering and safety assessments. The total flooding calculation will address the engine compartment, and other related and specific components that are covered by the FM standard.

(g) As an alternative to 30 CFR 75.1911(b), the Fogmaker System will address the requirements that are dictated by the FM 5970 standard. The Fogmaker System will utilize a total flooding analysis to determine the required volume of suppressant needed for the engine compartment and associated components, components required by the standard, the number of nozzles, and the minimum discharge time. A worksheet will be completed to determine the total flooding application of the engine compartment and specific components to determine: (1) the protected volume, (2) the piston accumulator volume, (3) the required quantity and position of the nozzles, and (4) the discharge time. For the Brookeville locomotive, the petitioner will (1) determine that the hazardous area in question is at least 75% enclosed before calculating the protected volume; (2) take into account that the estimated protected volume is $3m^3$ and is estimated to be at least 75% enclosed, which means a 6.0L piston accumulator meets the FM 5970 suppressant standard; (3) give consideration to local applications of the nozzles; (4) note

that 14 nozzles can be deployed for this application. The Fogmaker System uses a hydropneumatics detection system for automatic fire detection. The system will be activated by a lowering of pressure in the pressurized tubing, which is connected to the piston accumulator valve. The pressure inside the piston accumulator will engage a piston against an arm that holds a smaller piston in place to prevent the release of the suppressant. When a fire releases heat, the tubing is weakened, which allows the pressurized fluid to be released the loss of pressure opens the pathway and engages the suppressant.

(h) As an alternative to 30 CFR 75.1911(c), the Fogmaker System will have audio and visual alarms, which comply with the mandatory standard.

(i) As an alternative to 30 CFR 75.1911(d), the Fogmaker System will have the capability to cause a shutdown delay. The factory setting is 15 seconds but this can be changed. But the petitioner will have the Fogmaker System activated immediately with no delay in engine shutdown.

(j) As an alternative to 30 CFR 75.1911(e), the Fogmaker System will have the capability to install manual actuators. The petitioner will ensure that one will be located in the operator compartment and the other on the offside of the equipment.

(k) As an alternative to 30 CFR 75.1911(f), the Fogmaker System will remain operational for detection and activation due to the suppression system's mechanical nature. Additionally, the two manual systems are always operational and will have a battery backup that lasts at least 4 hours, in addition to being tied into the equipment's diesel battery.

(l) As an alternative to 30 CFR 75.1911(g), the Fogmaker System is currently designed for outby mobile diesel equipment.

(m) 30 CFR 75.1911(h) does not apply to the Fogmaker System because it is not electrically operated.

(n) As an alternative to 30 CFR 75.1911(i), the Fogmaker System will require a Final Installation Inspection Checklist, which requires daily inspection confirming that the piston accumulator is charged. Such an inspection is done by verifying that the indicator for the pressure gauge is in the green swept area. A weekly visual inspection is also required to ensure that it is not leaking or damaged. The Fogmaker System will be serviced at least annually by qualified, trained, and authorized personnel. UL requires that the Fogmaker System be serviced at least semi-annually. The piston accumulator will be serviced every 5 years, and the suppression fluid replaced. The piston accumulator will be re-built and the hydrostatic pressure tested every 10 years.

(o) The petitioner is not requesting modification to 30 CFR 75.1911(j) and will perform the required recordkeeping set out by 30 CFR 75.1911(j)(1) through (j)(3).

(p) The petitioner is not requesting modification to 30 CFR 30 CFR 75.1911(k). The petitioner will ensure that all miners are aware of the Fogmaker System when it is installed, and they will be trained how to use it according to Part 48. Task training will also be conducted for miners responsible for examinations.

Sheila McConnell,
Director,
Office of Standards, Regulations, and Variances.

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