Billing Code: 4520-43

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

DATES: All comments on the petitions must be received by the MSHA's Office of Standards, Regulations, and Variances on or before [INSERT DATE 30 DAYS FROM THE 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: Sheila McConnell, Acting 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 petitions 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: Barbara Barron, Office of Standards, Regulations, and Variances at 202-693-9447 (Voice), barron.barbara@dol.gov (E-mail), or 202-693-9441 (Facsimile). [These are not toll-free numbers.]

SUPPLEMENTARY INFORMATION:

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. That 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 and procedures for filing petitions for modification.

II. Petitions for Modification

Docket Number: M-2015-004-M.

Petitioner: Cementation USA, Inc., 10151 Centennial Parkway, Suite 110, Sandy, Utah 84070.

Mine: Eagle Mine, MSHA I.D. No. 20-03454, located in Marquette County, Michigan.

Regulation Affected: 30 CFR 57.15031 (Location of self-rescue devices).

Modification Request: The petitioner requests a modification of the existing standard to permit the miners at the Eagle Mine to wear 10-minute Ocenco Self-Contained Self-Rescue (SCSR) Devices on their mine belts in tandem with 1-hour SCSRs located on their vehicles, or equipment being operated within 500 feet or five minutes walking distance from any miner, whichever is less. The petitioner states that:

(1) The Eagle Mine is a trackless mining environment that utilizes rubber-tired, diesel- powered equipment.

(2) The majority of the work performed in this environment keeps the miners on or near mobile equipment.

(3) Mine Emergency Planning requires miners report to refuge chambers during emergencies.

(4) There are two 4-person and three 12-person MineARC refuge chambers strategically located underground.

(5) Only 48 persons are allowed underground at any given time, based on occupancy ratings of refuge chambers.

(6) Refuge chambers are strategically located and able to be reached within 10-minutes from the working locations.

(7) Secondary escape ways are located on each level are able to be reached within 10 minutes from anywhere on the working level.

(8) Miners currently carry Drager Oxy 6000 on their mine belt. The Drager Oxy 6000 is an MSHA approved SCSR that weighs 3.5 kg/7.7lbs.

(9) The Ocenco M-20 SCSR is an MSHA approved SCSR that weights 3.2 lbs.

(10) Miners will frequently catch the release latches of the Oxy 6000 SCSR on equipment handles, requiring replacement of the units.

The petitioner proposes to:

(1) Require all Cementation miners to wear Ocenco M-20 unit Self-Contained Self-Rescue Devices on their mine belts.

(2) Require all Cementation miners to inspect their issued Ocenco M-20 unit on a daily basis

(3) Have one Drager Oxy 6000 SCSR per occupant seat located on each piece of Cementation underground equipment or vehicle.

(4) Have the equipment operators inspect the Drager Oxy 6000 SCSR stored on Cementation equipment as part of the pre-op inspection.

(5) Provide cached six Drager Oxy 6000 SCSRs in each refuge chamber. The SCSRs will be inspected on a weekly basis as part of the weekly refuge chamber inspection.

(6) Provide cached five Drager Oxy 6000 SCSRs at the secondary escape way on each working level of the mine. These SCSRs will be inspected on a weekly basis.

(7) Store the MSHA Rated SCSRs in a sealed box that is clearly marked with highly visible reflective signage indicated on all escape and evacuation maps posted in the mine. These SCSRs will be inspected on a weekly basis.

(8) Provide training for all underground miners quarterly in the use, limitations, care, and inspection of the 10-minue and the 1-hour SCSR devices. This training will include:

(a) Hands-on training for all types of self-rescue devices used at the mine, which include:

(i) Instruction and demonstration in the use, care, and maintenance of self-rescue devices; and

(ii) The complete donning of the SCSR by assuming a donning position, opening the device, activating the device, inserting the mouthpiece, and putting on the nose clip.

(b) Hands on training in transferring from a 10-minute SCSR to a 1-hour SCSR.

(9) Provide instructor certified training annually for each Cementation miner that will include donning SCSRs in smoke, simulated smoke, or an equivalent environment, and breathing through a realistic SCSR training unit that provides the sensation of SCSR airflow resistance and heat.

(10) Have the operator certify by signature and date that the training was conducted according to the conditions in this petition, at the completion of training. This certification will include the names of the miners who participated in the training.

(11) The certifications will be made available to the Cementation miner's representative or an authorized Representative of the Secretary on request. This certificate will be kept at the mine for three years.

(12) Inspect all stored 1-hour SCSRs in the mine for defects in accordance with the manufacturer's instructions on a weekly basis and record the results for each device. Records of these inspections will be made available to the miner's representative and an Authorized Representative of the Secretary on request. Records of these inspections will be maintained for three years.

(13) Maintain all SCSRs in good condition. SCSRs that do not function properly will be removed from service and replaced with properly functioning SCSRs.

The petitioner asserts that the combination of self-contained self-rescue devices will at all times guarantee no less than the same measure of protection for miners as afforded by the standard

Docket Number: M-2015-005-M.

Petitioner: Tronox Alkali Corp., 950 17th Street, Suite 2600, Denver, Colorado 80202.

Mine: Tronox Alkali @ Westvaco, MSHA I.D. No. 48-00152, located in Sweetwater County, Wyoming.

Regulation Affected: 30 CFR 57.4760(a) (Shaft mines).

Modification Request: The petitioner requests a modification of the existing standard that recognizes that Tronox Alkali Corp., can utilize a mechanical ventilation reversal process for compliance that at all times, provides the same or a greater degree of protection to persons underground as would be afforded by other methods of compliance (e.g. control doors), and avoids reducing safety by the use of other methods. The petitioner states that:

(a) Westvaco is governed in part by 30 CFR 57.22214, which prohibits compliance with 30 CFR 57.4760(a), if controls doors are used.

As a Class III underground mine, "changes in ventilation which affect the main air current or any split thereof, and which adversely affect the safety of persons in the mine will be made only when the mine is idle," 30 CFR 57.22214(a) (emphasis added). The only persons permitted in the mine during these ventilation changes are the persons making such changes, 30 CFR 57.22214(b). The use of control doors potentially violates the provision and diminishes safety.

The actuation of control doors near intake shafts changes the ventilation of the main air current, could occur while the mine is not idle, and may adversely affect safety, even if only performed when fire, smoke, or toxic gases are detected. In contrast, controlled air reversal would only be instituted by management to improve safety by moving combustion gases out of the mine and away from miners. Accordingly, changes in a mine's ventilation via control doors has the potential to conflict with 30 CFR 57.22214. On the other hand, mechanical ventilation reversal of the airflow would not conflict, thereby providing further reasons for the approval of this petition.

b. Empirical testing of the underground airflow confirms that Tronox can accomplish ventilation reversal pursuant to 30 CFR 57.4760(a)(2).

Tronox and its predecessor have operated Westvaco since before the Mine Act was enacted. Throughout that time, Westvaco worked with knowledge that, if necessary, a reversal of airflow was always available to control the spread of fire, smoke, and toxic gases.

During an April 8, 2015, MSHA spot inspections, the Secretary's authorized representative issued the Citations to Tronox for alleged violation of the standard. In response to the Citations, Tronox upgraded its ventilation system. Westvaco has three

intake shafts (Nos. 8, 5, and 7), each equipped with identical 1500 hp Jeffry 8HU Vane Axial ventilation fans, located on the surface. These fans provide the motive air forced into the mine to maintain a positive pressure, forcing air out of the mine through Shaft Nos. 1, 2, 3, 4, 6, and 9. Tronox engineering upgrades allow the mine's hoistman to turn off the ventilation fans, individually or in combination, from their workstation. The hoistman's station is manned during every shift at Westvaco.

After the upgrades were complete, Tronox performed engineering tests and analyses to confirm that the on-duty hoistman could mechanically reverse the ventilation airflow in the mine by turning off the main fans in various permutations. Specifically, by turning off one of the three main fans that force air into the mine, Tronox is able to maintain positive pressure while simultaneously directing the flow of air toward a different exhaust shaft.

Tronox tested the fans' effect on underground airflow with anemometers, smoke tubes, pressure transducers, and synchronized watches. During the test, Tronox turned off each ventilation fan and measured the airflow direction, velocity, and pressure fluctuations at the bottom of the shaft, before and after each fan was de-energized. The airflow direction was cross-checked at the top of the shaft to validate the findings underground. The pressure transducers at the top and bottom of the intake shaft were set to log pressure readings every five seconds. The testing showed a quantifiable change in the direction of the underground airflow near each of the shaft stations, which would control the spread of smoke and toxic gases underground in the event of a fire.

1. When the 8 Shaft fan is operating the airflow in the vicinity traveled away from the 8 Shaft, through the east and southern passageways, towards the longwall. The anemometer and smoke tube recorded the velocity of the airflow in the area.

When the 8 Shaft fan is turned off, the direction of the airflow reversed in less than two minutes, and the 8 Shaft transitioned from an intake shaft to an exhaust shaft. The velocity of the airflow, now traveling towards the 8 Shaft, was measured between 35 and 125 feet per minute.

Most important when the 8 Shaft fan was running the airflow in the three passageways – east, south, and southwest – emanating from the 8 Shaft had been towards the 5 Shaft and 7 Shaft. With the 8 Shaft turn off, the airflow in these three passages reversed, traveling towards the 8 Shaft and away from the 5 Shaft and 7 Shaft. In the event Westvaco experiences a fire in the southern section of the mine, by turning off the 8 Shaft fan, the change in air pressure would force the smoke and toxic gases to travel towards and exit the mine through the 8 Shaft. At the same time, fresh air from the 5 Shaft and 7 Shaft main fans would fill the passageways used by the miners to reach the two designated escape routes at the 5 Shaft and 7 Shaft, and would enhance the safety of the evacuation in a means comparable to, or exceeding the safety provided by the control doors.

2. When the 5 Shaft is operating, the airflow in the vicinity traveled away from the 5 Shaft through the north, west, and southern passageways. The anemometers recorded the velocity of the airflow in this area.

When the 5 Shaft was turned off, once again the direction of the airflow reversed in less than two minutes, and the 5 Shaft transitioned from an intake shaft to an exhaust

shaft. The velocity of the airflow, now traveling towards the 5 Shaft, was measured between 140 and 195 feet per minute.

Similar to the 8 Shaft, when the 5 Shaft fan was running, the airflow in the three adjacent passageways – east, south, and southwest – emanating from the 5 Shaft had been towards the 8 Shaft and the 7 Shaft. With the 5 Shaft fan turned off, the airflow in these three passages reversed, traveling towards the 5 Shaft and away from the 8 Shaft and the 7 Shaft. In the event Westvaco experienced a fire in the central section of the mine, by turning off the 5 Shaft fan, the change in air pressure would force the smoke and toxic gases to travel towards and exit the mine through the 5 Shaft. At the same time, fresh air from the 8 Shaft and the 7 Shaft main fans would fill the northern and southern passageways, would provide the miners with good air as they progressed to the 8 Shaft primary hoist or the 7 Shaft northern escape route, and would enhance the safety of the evacuation in a means comparable to or exceeding the safety provided by control doors.

3. When the 7 Shaft fan is operating the airflow in the vicinity traveled away from the 7 Shaft, through west passageway. The anemometer recorded the velocity of the airflow in the area.

When the 7 Shaft fan was turned off, the direction of the airflow reversed in less than two minutes, and the 7 Shaft transitioned from an intake shaft to an exhaust shaft. The velocity of the airflow, now traveling towards the 7 Shaft, was measured at 195 feet per minute.

The 7 Shaft is on the northern side of the mine, and the intake air travels from the 7 Shaft down a westward passageway before joining the airstream supplied by the 5 Shaft in the center of the mine. With the 7 Shaft fan turned off, the airflow in the northern

section of the mine is reversed, and the air supplied by the 5 Shaft flows into the northern section and exhausts through the 7 Shaft. In the event Westvaco experienced a fire in the norther section of the mine, by turning off the 7 Shaft fan, the change in air pressure would force the smoke and toxic gases to travel towards and exit the mine through the 7 Shaft. At the same time, fresh air from the 5 Shaft main fan would fill the northern section passageways, would provide the miners with good air as they progressed to the 8 Shaft primary hoist or the 5 Shaft escape route, and would enhance the safety of the evacuation in a means comparable to, or exceeding the safety provided by control doors.

4. Overall results of engineering upgrades and Westvaco conditions. Based on the empirical data gathered from Tronox' testing, the upgrades permit the reversal of the direction of the airflow underground in all sections of the mine within two minutes. This performance demonstration, when used in accordance with the Westvaco Emergency Control Plan, readily complies with subsection (a)(2) of the standard, and provides equivalent or improved protection as compared to subsection (a)(1) of the standard, while preventing a potential diminution of safety from other compliance methods.

Control doors in an underground mine are intended to constrain or restrict airflow and ventilation in an attempt to isolate fire, smoke, and toxic gases. By isolating these hazards, control doors (in theory) prevent airflow migrating from the hazardous area to sections of the mine that can expel any hazardous gases or smoke. By isolating various sections of a mine and restricting the ventilation, control doors potentially trap smoke and toxic gases in areas miners may need to travel in order to reach operational hoists and escapeways. However, the ability to mechanically reverse the ventilation airflow in

designated sections of the mine, not only draws smoke and toxic gases away from egress points, it provide a source of fresh air into the areas where miners are located.

c. The installation of control doors at Westvaco could result in a diminution of safety by reducing or eliminating ventilation during an evacuation. The purpose of the standard is to "control the spread of fire, smoke and toxic gases." The first alternative to comply with the Standard envisions the installation of control doors. The second alternative envisions mechanical ventilation reversal, 30 CFR 57.4760(a). The alternatives are mutually exclusive. If Tronox is forced to implement the first alternative, and the installed control doors were actuated in response to an emergency, Westvaco's main fans at the affected intake shafts would be isolated and rendered ineffective. The fans, if left running would be forcing air into closed shafts, and the motors would be forced out of their operating ranges and likely stalled, resulting in a loss of ventilation in passageways adjoining the closed control doors.

Conversely, Tronox' procedures were tested and proven to reverse the airflow in the mine with the shutdown of a main fan. Requiring Tronox to install control doors would restrict this airflow reversal, and would likely increase the accumulation of smoke and toxic gases in areas confined between any control doors that closed in an emergency. A better solution to protect the health and safety of the evacuating miners would affirm that an airflow reversal will draw smoke and toxic gases out of the shaft, rather than accumulating underground where miners are still evacuating.

Moreover, compliance with 30 CFR 57.4760(a)(2), which specifically authorizes airflow reversal, provides a greater or equal level to safety than the use of control doors. By continuing to operate fans at the unaffected intake shafts, Westvaco is maintaining

positive pressure, impeding the geological formation from degassing, and reducing the amount of methane in the mine. The airflow reversal provides a superior measure of protection than the alternatives, which would not impede degassing of subsurface methane into the workplace.

1. The alternate solution contemplated by 30 CFR 57.4760(a)(1), control doors, will result in a diminution of safety to miners at Westvaco, as compared to Tronox' installed engineering upgrades that produce air reversal capability for use in a manner consistent with its escape and evacuation plan. If the control doors for all three shafts were actuated in response to an emergency, all three ventilation fans would have to be turned off. Turning off all three fans and having the control doors closed would put Westvaco in a more hazardous situation than utilizing intentional reverse airflow ventilation because: (a) contaminated air near the fire may not be forced up the designated exhaust shaft needed to provide safety for the miners; and (b) there may be no ventilation source for the miners along the escape routes or in the shafts.

In addition, the standard requires that control doors be constructed so that they can be opened from either side by one person, or be provided with a personnel door that can be opened from either side, 30 CFR 57.4760(a)(1)(vi). Although this requirement for control doors to have a method that allows miners to pass through them to reach the intake shaft makes sense from an entrapment standpoint, the fact that the doors may be opened during an emergency creates the potential for toxic gases to migrate from one side of the door to the other. In addition, opening and closing control doors or personnel doors during an emergency creates the potential for the door to be accidentally opened or left open.

2. Tronox' implementation of mechanical ventilation reversal meets the criteria required by 30 CFR 44.4(a). As demonstrated by Tronox' testing, analysis, and Westvaco's layout, Tronox' ability to remotely reverse fan ventilation enables Tronox to direct, as opposed to simply restrict, the flow of air underground during a fire. Airflow reversal would be used only in emergencies, with the approval of the mine Manager/Disaster Director or his/her designee. In the event of an emergency, the Disaster Director will continually assess the location of the miners and the location of the fire and/or smoke source, and the 8, 5, and 7 Shafts will be maintained as air intake shafts to provide fresh air underground. In the event that the Disaster Director determines that air reversal via the shutdown of airflow from one of these intake shafts is necessary to control the spread of fire, smoke, or toxic gases, and will not adversely affect the evacuation, the Disaster Director will coordinate with the Ventilation Coordinator the shutdown of a main fan to reverse the airflow in the desired area. The Safety Coordinator, pursuant to Westvaco' Emergency Control Plan, will inform MSHA of the airflow reversal.

For example, the Disaster Director would order the fan at the 8 Shaft to be turned off in the event there is a fire or smoke in the southern section of the mine, and miners are to the north of the fire or smoke source. If the Disaster Director determines that the drop in air pressure would force smoke and toxic gases to travel toward Shaft No. 8, and allow fresh air to flow from the 7 Shaft and 5 Shaft, the Disaster Director would direct the Ventilation Coordinator to shut down the 8 Shaft's main fan. During this reversal of airflow, the air in the east, and south passageways emanating from the 8 Shaft would now

exhaust through the 8 Shaft as the miners underground continued to execute their trained response – to evacuate in fresh air by a secondary escape route.

In contrast to control doors, which merely segregate the intake shafts and mine passageways into isolated or unventilated zones and can be accidently closed or left open. Tronox' use of mechanical ventilation reversal can provide beneficial affects to the entire mine. The ventilation reversal can draw air, smoke, and toxic gases near the fire away from the remainder of the mine on a continual basis as the miners egress.

Ventilation reversal allows miners to arrive at each shaft station without having to stop to open a control/personnel door and then close it behind them. Moreover, the positive effects of the ventilation reversal are preserved as the miners reach the shaft stations. In contrast, a control door's integrity and the isolation at each door's location are breached every time an egressing miner opens the control door.

Notwithstanding the fact that Tronox' use of mechanical ventilation reversal is entirely consistent with 30 CFR 57.4760(a), Tronox recognizes that the benefits of this engineering solution will be maximized with additional training for its miners. If this petition is approved, Tronox proposes to provide additional training, beyond its current Part 48 training, that will instruct miners and supervisors on the ventilation reversal capability upgrades and the condition and procedures for their use during emergencies.

Tronox continues to maintain that its engineering upgrades at Westvaco, along with its evacuation and escape plans, comply with the standard, 30 CFR 57.4760(a)(2), and the citations should be terminated. Nevertheless, in the alternative to the extent MSHA contends that control doors or other abatement means are required, Tronox respectfully requests MSHA grant this petition for modification of the standard. For the

reasons discussed above, permitting Tronox to mechanically reverse the ventilation, in conjunction with the proposed additional training measures, provides equal or greater protection to the miners than installing control doors that will constrict airflow underground. In addition, the imposition of 30 CFR 57.4760(a)(1) at Westvaco, as applied by MSHA, as opposed to the application of 30 CFR 57.4760(a)(2) as described herein, will result in a diminution of safety to the miners at Westvaco.

The petitioner asserts that application of the existing standard will result in a diminution of safety to the miners and that the proposed alternative method will at all times guarantee no less than the same measure of protection afforded by the existing standard.

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