DEPARTMENT OF LABOR

Mine Safety and Health Administration

30 CFR Parts 6, 14, 18, 48, and 75

RIN 1219–AB59

Flame-Resistant Conveyor Belt, Fire Prevention and Detection, and Use of Air From the Belt Entry

AGENCY: Mine Safety and Health Administration (MSHA), Labor.

ACTION: Final rule.

SUMMARY: This final rule addresses the recommendations of the Technical Study Panel (Panel) on the Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining. The Panel was established under Section 11 of the Mine Improvement and New Emergency Response (MINER) Act of 2006. The final rule is consistent with the Panel's recommendations and includes requirements for: Flame-resistant conveyor belts; training Atmospheric Monitoring System operators; levels of respirable dust in belt entries; airlocks along escapeways; minimum and maximum air velocities; approval for the use of air from the belt entry to ventilate working sections; monitoring point-feed regulators; smoke sensors; standardized tactile signals on lifelines; replacing point-type heat sensors with carbon monoxide sensors; and belt conveyor and belt entry maintenance.

DATES: *Effective Date:* The final rule is effective on December 31, 2008.

Compliance Dates: Details are in the **SUPPLEMENTARY INFORMATION** section of this document.

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SUPPLEMENTARY INFORMATION:

Compliance Dates

Each mine operator shall comply with the following sections by the dates listed below.

1. § 48.27(a) and §§ 75.156(a), 75.350(b), and 75.1731 by March 2, 2009.

2. § 75.333(c)(4) by March 31, 2009.

3. §§ 75.380(d)(7), 75.380(f), 75.381(e)(5), and 75.381(f) by June 30, 2009.

4. §§ 75.350(a)(2), 75.351(e)(2), 75.1103–4(a), 75.1108(a), and 75.1108(b) December 31, 2009.

5. § 75.1108(c) by December 31, 2018.

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IX. Final Rule

I. Introduction

This final rule addresses the recommendations of the Technical Study Panel (Panel), which was established under Section 11 of the MINER Act. The Secretary of Labor chartered the Panel on December 22, 2006 (71 FR 77069).

On December 20, 2007, the Panel issued its final report, which included the following 20 recommendations passed by unanimous vote:

- Recommendation 1—Conveyor belt flammability testing and approval;
- Recommendation 2—Other belt tests;
- Recommendation 3—Improved fire resistance standards for all underground coal mines;
- Recommendation 4—Coordinating belt testing with other countries;
- Recommendation 5—Belt entry and conveyor belt maintenance;
- Recommendation 6—Special requirements for the use of belt air;
- Recommendation 7—Belt air approval recommendation;
- Recommendation 8—Discontinuing point-type heat sensors;
- Recommendation 9—Smoke sensors;
- Recommendation 10—Use of diesel-discriminating sensors;
- Recommendation 11—Review of AMS records;
- Recommendation 12—AMS operator training certification;
- Recommendation 13—Minimum and maximum air velocities;
- Recommendation 14—Escapeways and leakage;
- Recommendation 15—Lifelines;
- Recommendation 16—Point-feeding;
- Recommendation 17—Respirable dust;
- Recommendation 18—Mine methane;
- Recommendation 19—Inspections; and
- Recommendation 20—Research.

A copy of the Panel's report is available on MSHA's Web site at: *http://www.msha.gov/beltair/BeltAirFinalReport122007.pdf.*

The final rule is based on the Panel's recommendations, Agency data and experience, and comments and testimony received during the rulemaking process. MSHA is providing delayed compliance dates for some requirements in the final rule for mine operators to have adequate time to comply.

II. Statutory and Rulemaking Background

The Consolidated Appropriations Act of 2008 (Pub. L. 110–161, December 26, 2007) requires the Secretary to publish regulations, consistent with the recommendations of the Panel, to require that:

> [i]n any coal mine * * * belt haulage entries not be used to ventilate active working places without prior approval from the Assistant Secretary. Further, a mine ventilation plan incorporating the use of air coursed through belt haulage entries to ventilate active working places shall not be approved until the Assistant Secretary has reviewed the elements of the plan related to the use of belt air and has determined that the plan at all times affords at least the same measure of protection where belt haulage entries are not used to ventilate working places.

The regulations must be finalized by December 31, 2008.

Based on the Panel's recommendations, MSHA published a proposed rule on Safety Standards Regarding the Recommendations of the Technical Study Panel on the Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining in the **Federal Register** on June 19, 2008 (73 FR 35026). On that same date, MSHA published a Request for Information (RFI) in the **Federal Register** on criteria for testing the toxicity and density of smoke produced from burning conveyor belt or similar materials (73 FR 35057).

The Agency will review relevant information received on the RFI and make a determination on appropriate regulatory action.

The Agency held four public hearings on: August 19, 2008 in Salt Lake City, UT; August 21, 2008 in Lexington, KY; August 26, 2008 in Charleston, WV; and August 28, 2008 in Birmingham, AL. The comment period closed on September 8, 2008.

Like the proposal, the final rule includes new and revised safety standards for underground coal mines for those Panel recommendations that required rulemaking. The following five recommendations did not require rulemaking: Recommendation 2, concerning ''Other Belt Tests,'' recommends that MSHA adopt a drum friction test to be utilized for a period of two years to evaluate and assess the contribution to conveyor belt fire safety of such a test. MSHA is continuing to evaluate the drum friction test to determine if it could complement the Belt Evaluation Laboratory Test method. This evaluation will occur over a two-year period, and is consistent with the Panel's recommendation. Recommendation 4, concerning ''Coordinating belt testing with other countries,'' recommends that MSHA establish contacts and maintain dialogue with other key mining countries. MSHA's technical support program area maintains continuing contact and dialogue with other key mining countries. Recommendation 11, concerning ''Review of AMS records,'' recommends that MSHA perform regular, periodic reviews of atmospheric monitoring system (AMS) records at mines using air from the belt entry to ventilate working sections. In addition, MSHA already conducts periodic reviews of AMS records during regular inspections of the mine. Recommendation 19, concerning ''Inspections of mines utilizing belt air in the working section,'' recommends that a more structured procedure be instituted to help mine inspectors complete their inspection duties with greater ease and efficiency. MSHA will accomplish this through inspector training. Recommendation 20, concerning ''Research,'' recommends research utilizing ventilation modeling, engineering design and risk analysis be performed to investigate: Improved escapeway design, reduced air leakage, and booster fans. MSHA will accomplish this through the Agency's technical support program area, working in collaboration with the National Institute for Occupational Safety and Health (NIOSH).

This preamble, like that of the proposal, is organized in two parts. Part III(A) includes requirements for improved flame-resistant conveyor belts. Part III(B) includes requirements for fire prevention and detection and approval of the use of air from the belt entry to ventilate working sections.

III. Section-by-Section Analysis

A. Flame-Resistant Conveyor Belt

1. General

In the 1980s, MSHA and the former Bureau of Mines (Bureau) of the Department of the Interior developed a flame-resistance test for conveyor belts that would result in a higher level of flame resistance than the existing 30 CFR Part 18 test. The Bureau and MSHA constructed a large-scale test facility at the Lake Lynn Laboratory. The large scale tests showed the effect of air flow on belt flammability. These tests were conducted over a wide range of air velocities.

MSHA used the large-scale flammability test data to develop the Belt Evaluation Laboratory Test (BELT), a laboratory-scale flame resistance test. In order for a belt to pass the BELT method, it must have improved fire-resistant capability, which greatly limits flame propagation. The BELT method is easy to perform, objective, correlates well with large-scale tests, and is economically and technologically feasible. MSHA and the Bureau performed extensive testing of the BELT method. Test results over a 34-month period, based on samples of conveyor belts, reveal that the BELT method is highly precise and accurate.

On December 24, 1992, MSHA published a proposal to revise the existing regulation for testing and acceptance of conveyor belts (53 FR 61524). That proposal would have replaced existing § 18.65 concerning flame-testing of conveyor belts. Under the 1992 proposal, underground conveyor belts would have been required to meet the more protective BELT method for MSHA approval under proposed Part 14.

However, the Agency withdrew the proposal (67 FR 46431) on July 15, 2002, due to the decreased frequency of conveyor belt fires. As mentioned earlier, in accordance with Section 11 of the 2006 MINER Act and the recommendation of the Panel, MSHA issued a proposal on June 19, 2008 on Safety Standards Regarding the Recommendations of the Technical Study Panel on the Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining.

The final rule addresses Panel Recommendation No. 1—Conveyor Belt Flammability Testing and Approval, and Recommendation No. 3—Improved Fire Resistance Standards for All Underground Coal Mines. Consistent with the Panel's recommendations, this final rule establishes a new Part 14 that includes the BELT method for the approval of improved flame-resistant conveyer belts. In addition, the final rule requires that improved flame-resistant conveyor belts be used in all underground coal mines. It makes technical and conforming changes to existing Parts 6 and 18.

2. Discussion of the Final Rule

Final § 14.1, changed from the proposal, establishes the purpose of the final rule and effective date for approval holders. Final Part 14 establishes the flame resistance requirements for MSHA approval of conveyor belts for use in underground coal mines. Applications for approval or extensions of approval submitted after December 31, 2008 must meet the requirements of final Part 14.

During the rulemaking process and at each of the public hearings, MSHA solicited comments on the impact of the proposed one-year period provided manufacturers and operators to transition to the new belt, on existing inventories, and associated costs to approval holders. A commenter stated that the transition period was adequate and that they would not have any difficulty meeting it as long as the approval process was quick. Another commenter stated that the timetable established by the Agency may be too aggressive to assure that all the laboratory testing and approvals are timely completed so that belt manufacturing and delivery of the new belt products are timely. Based on Agency experience, MSHA's timely processing of applications will be dependent upon the completeness of applications submitted to the Agency. To assure that the new belt will be

available in a timely manner, the final rule requires that all applications for approval or extensions of approval submitted after December 31, 2008 meet the requirements of the final rule. MSHA intends to process all applications that fully comply with the requirements in the final rule on a timely basis.

Final § 14.2 establishes the following definitions: ''Applicant'', like the proposal, is derived from existing §§ 6.2 and 7.2, and refers to an individual or organization that manufactures or controls the production of a conveyor belt and who applies to MSHA for approval. MSHA received no comments on the proposal.

''Approval'', like the proposal, is derived from existing § 7.2, and replaces the term ''acceptance'' under existing § 18.2. An approval, issued by MSHA, shows that a conveyor belt has met the requirements of this Part, and authorizes a marking identifying the belt as approved. This is consistent with other MSHA approval regulations which define ''approved'' as the general term which indicates that a product has met MSHA's technical requirements. MSHA received no comments on the proposal.

''Extension of approval'', like the proposal, is derived from existing § 7.2, and is defined as a document issued by MSHA which states that a change to a conveyor belt previously approved by MSHA continues to meet the requirements of this Part. An extension of approval authorizes the continued use of the approval marking after the appropriate extension number has been added. MSHA received no comments on the proposal.

''Flame-retardant ingredient'', like the proposal, means material that inhibits ignition or flame propagation. MSHA received no comments on the proposal.

''Flammable ingredient'', like the proposal, means material that is capable of combustion. MSHA received no comments on the proposal.

''Inert ingredient'', like the proposal, means a material that does not contribute to combustion. MSHA received no comments on the proposal.

''Post-approval product audit'', like the proposal, is derived from existing § 7.2, and is defined as an examination, testing, or both, by MSHA of an approved conveyor belt selected by MSHA to determine if it meets the technical requirements and has been manufactured as approved. MSHA received no comments on the proposal.

''Similar conveyor belt'', like the proposal, is defined as a conveyor belt that shares the same cover compound, general carcass construction, and fabric type as another approved conveyor belt. MSHA received no comments on the proposal.

Final § 14.3, derived from existing § 18.9(a), provides that representatives of the applicant and other persons agreed upon by MSHA and the applicant may be present during tests and evaluations conducted under this Part. In response to comments, the final rule is changed from the proposal to allow the Agency to consider requests received from others to observe tests.

Commenters requested that miners (or representatives of the miners) be allowed to observe and evaluate the testing of belts. In response to this comment, the final rule would allow the Agency to consider requests received from others to observe tests. It is important to note that such requests would only apply to tests, not evaluations. MSHA's evaluations involve a paper review of the application and thus would not be appropriate for observation. MSHA believes that observation of tests may be appropriate if it does not involve the release of proprietary information, so long as it does not interfere with the approval process, does not delay the approval, and does not create a conflict of interest. As stated during the rulemaking process, the Agency must protect any proprietary information submitted.

With this revision, MSHA intends that the approval process for flame-resistant conveyor belt be as transparent as possible, while safeguarding the confidentiality of all proprietary information submitted by applicants. The Agency made a minor non-substantive change, which clarifies that it is not necessary to state that MSHA be included in the parties allowed to observe testing and evaluation.

Final § 14.4, like the proposal, is derived from existing §§ 7.3 and 18.6, and provides application procedures and requirements. The final rule covers two types of approval actions: Applications for approval and extensions of approval. When requesting the approval of a flame-resistant conveyor belt, final § 14.4 requires that the applicant submit information necessary to properly evaluate a conveyor belt. If, after receipt of an approval, the applicant requests approval of a similar conveyor belt or an extension of approval for the original conveyor belt, the applicant will not be required to submit documentation duplicative of previously submitted information. Only information related to changes in the previously approved conveyor belt will be required, avoiding unnecessary paperwork.

Final § 14.4(a), like the proposal, is based on existing §§ 7.3(a) and 18.6(a). It specifies how and where an applicant files for MSHA approval or extension of approval. Paragraph (a) requires that applications for approvals or extensions of approval be sent to: U.S. Department of Labor, Mine Safety and Health Administration, Chief, Approval and Certification Center, 765 Technology Drive, Triadelphia, West Virginia 26059. Alternatively, applications for approval or extensions of approval may be filed online at *http://www.msha.gov* or faxed to: Chief, Mine Safety and Health Administration Approval and Certification Center at 304–547–2044. Since the proposal, the address of the Center has been changed (73 FR 52210); the final rule reflects this change. MSHA received no comments on the proposal.

Final paragraph (b), like the proposal, requires that each application for approval contain information concerning the identification and construction of a conveyor belt, except any information submitted in a prior approval application need not be re-submitted. An application must address either a single specific construction, or multiple-ply construction consisting of the same cover compound and carcass construction varying only by the number of plies and fabric weight. Under the final rule, if approval of multiple-ply construction is requested, the minimum and maximum number of plies both with thinnest-specified cover thickness and heaviest-specified fabric weight will be tested.

Final § 14.4(b)(1), like the proposal, requires a technical description of the conveyor belt. This information must include: Trade name (specification or code numbers) or identification number; cover compound type and designation number; belt thickness and thickness of top and bottom covers; presence and type of skim coat; presence and type of friction coat; carcass construction (number of plies, solid woven); carcass fabric by textile type and weight (ounces per square yard); presence and type of breaker or floated ply; and the number, type, and size of cords and fabric for metal cord belts. MSHA received no comments on the proposal.

Proposed § 14.4(b)(3) has been renumbered as § 14.4(b)(2). Like the proposal, it requires the name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application. The applicant may also wish to include the representative's electronic mail (e-mail) address. MSHA received no comments on the proposal.

Proposed § 14.4(b)(2) has been renumbered as final § 14.4(c)(1). The final rule permits an applicant to request an approval of a similar belt or extension of approval without testing if the formulation of the belt is provided and MSHA determines testing is not necessary. The application must include formulation information on the compounds in the conveyor belt (for example, styrene-butadiene rubber (SBR), polyvinyl chloride (PVC), chloroprene, composite, or steel cable) by specifying either: (1) Each ingredient by its chemical name along with its percentage (weight) and tolerance or percentage range; or (2) each flame-retardant ingredient by its chemical or generic name with its percentage and tolerance or percentage range, or its minimum percent. The applicant must list each flammable and inert ingredient by chemical, generic or trade name, along with the total percentage of all flammable and inert ingredients. MSHA will evaluate this information and determine whether testing using the BELT method should occur or if the similar belt or extension of approval can be approved without testing.

A commenter stated that the actual formulation data required to be submitted to MSHA is more extensive than the existing standard requires and includes competitively sensitive information. The commenter also stated that even though MSHA intends to protect the confidentiality of the information, there can be no guarantees. This commenter stated that MSHA should be prohibited from requiring compounding or formulation information to be submitted as part of the application for approval.

Approving belts based upon an evaluation of the formulation and construction of the belt speeds the approval process and reduces cost to the applicant by eliminating testing fees. To approve a belt without testing, detailed formulation information on the composition and construction of the previously approved belt or belt family is necessary to assure that the flame-resistant properties would be maintained. This information may not be necessary if each belt construction is tested using the BELT method. To address this commenter's concern, the final rule allows the option of submitting detailed formulation and construction data for belts, or submitting samples for testing. Applicants who choose to submit samples for testing would be responsible for testing fees.

When the formulation and construction information is collected, MSHA is required to maintain the proprietary nature of this conveyor belt information submitted under final § 14.4 under the Freedom of Information Act (FOIA, 5 U.S.C. 552). MSHA intends to continue its existing practice of treating information on product specifications and performance as proprietary information. The Agency will protect disclosure of this information to the fullest extent, consistent with the FOIA. Section 14.9 of the final rule provides that MSHA notify the applicant of requests for product information. MSHA will provide the manufacturer the opportunity to present its position on disclosure. In addition, information identified by the manufacturer as proprietary will not be disclosed.

Proposed § 14.4(b)(4) has been renumbered as final § 14.4(c)(2). It requires the identification of any similar conveyor belt for which the applicant already holds an approval. The final rule has been revised to require submission of the formulation specifications for the approved similar belt if it has not already been submitted to the Agency. This would be the same information as specified in § 14.4(c)(1).

Final § 14.4(c)(2)(i) requires the applicant to submit, as part of the application, the MSHA assigned approval number of the belt that most closely resembles the one being evaluated. Final § 14.4(c)(2)(ii) requires an explanation of any changes from the existing approval. MSHA's evaluation of whether a belt is similar will determine if the application has to be processed as an extension of approval or a new approval.

A commenter stated that this proposal is confusing. This commenter further stated that MSHA should take the safe approach and test all belt products, regardless of the number of plies. Under existing Part 18, MSHA's testing program for accepting belts over the last 30 years includes the evaluation of similar belts. Under the existing program, each belt that is submitted to MSHA is thoroughly evaluated according to existing application procedures to determine if additional testing is necessary or if an extension is justified. The use of the BELT method will greatly increase safety to miners by the approval of improved flame-resistant belt. Further, additional information required under the final rule will allow MSHA to provide a full evaluation of the belt application.

Final § 14.4(d), renumbered from proposed § 14.4(c), requires that any change from the documentation on file at MSHA that affects the technical requirements of Part 14 must be submitted for approval prior to implementing the change. This requirement avoids changes being made that could affect the flame resistant properties of the conveyor belt. MSHA received no comments on the proposal.

Final § 14.4(d)(1), (2), and (3), like the proposal, include requirements for each application for an extension of approval. Final paragraph (d)(1) requires the MSHA-assigned approval number of the conveyor belt for which the extension is sought; final paragraph (d)(2) requires the description of the proposed change to the conveyor belt; and final paragraph (d)(3) requires the name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application. The applicant may also include the representative's e-mail address. MSHA received no comments on the proposal.

Final § 14.4(e), renumbered from proposed § 14.4(d), provides that MSHA will determine if testing, additional information, samples, or material is needed to evaluate an application. Under the final rule, if an applicant believes that flame testing is not required, a statement explaining the rationale must be included in the application. MSHA received no comments on the proposal.

Final § 14.4(f), renumbered from proposed § 14.4(e), permits an applicant to request an equivalency determination under existing § 6.20 for a non-MSHA product safety standard. MSHA received no comments on the proposal.

Final § 14.4(g), renumbered from proposed § 14.4(f), requires that fees calculated in accordance with Part 5, entitled: Fee for Testing, Evaluation, and Approval of Mining Products, must be submitted. MSHA received no comments on the proposal.

Final § 14.5, like the proposal, requires that upon request by MSHA, each applicant must submit three pre-cut, unrolled, flat samples of conveyor belt for flame testing. Under the final rule, each sample must be 60 ± ¼ inches (152.4 ± 0.6 cm) long by 9 ± ⅛ inches (22.9 ± 0.3 cm) wide. The laboratory-scale test for flame resistance requires testing of three samples to determine acceptable performance. The final rule requires pre-cut and unrolled flat samples, which can be mounted for testing. Uncut and rolled samples require additional time to be cut and flattened for subsequent mounting in the test chamber. MSHA uses the word ''pre-cut'' to inform the applicant that the samples would need to be sent to MSHA already cut to the required sample size. Under existing § 18.65(a), acceptance applicants are required to submit samples for testing.

Curling of samples has presented a problem during testing. These

requirements, along with the required preconditioning of samples, serve to minimize curling of samples. The requirement to submit samples for testing is derived from existing § 18.6(i). However, the requirement for the number and dimension of samples is specific to the BELT method. MSHA received no comments on the proposal.

Final § 14.6, like the proposal, addresses issuance of approval. Final § 14.6(a) provides that MSHA will issue an approval or notice of the reasons for denying approval after completing the Agency's testing and evaluation. The notice of approval will be accompanied by relevant documentation and related material, covering the details of design and construction of the conveyor belt upon which the approval is based. MSHA received no comments on the proposal.

Final § 14.6(b), like the proposal, requires that an applicant not advertise or otherwise represent a conveyor belt as approved until MSHA has issued an approval. MSHA received no comments on the proposal.

Final § 14.7, like the proposal, includes requirements for approval marking and distribution records. Final § 14.7(a), like the proposal, requires that an approved conveyor belt must be marketed only under the name listed in the approval. MSHA received no comments on the proposal.

Final § 14.7(b), like the proposal, is based on existing § 18.65(f). It requires approved conveyor belts to be legibly and permanently marked with the assigned MSHA approval number for the service life of the product. The approval marking must be at least ½ inch (1.27 cm) high, placed at intervals not to exceed 60 feet (18.3 meters), and repeated at least once every foot (0.3 m or 30.5 centimeters) across the width of the belt. MSHA requires this marking method since a conveyor belt's edges can wear as it passes along the conveyor framework, causing fraying. Fraying of conveyor belts, which may occur during normal use, can cause the approval markings on belts to become illegible or worn. Relocating the markings from the edge of the belt to across its width permits identification of the conveyor belt for a longer time. This method also enables better identification of conveyor belts cut from larger to smaller widths, or where worn edges are trimmed. MSHA received no comments on the proposal.

Final § 14.7(c), like the proposal, provides that where the construction of a conveyor belt does not permit marking as prescribed under the final rule, other permanent marking may be accepted by MSHA. This provision allows alternatives for marking conveyor belts. MSHA received no comments on the proposal.

Final § 14.7(d), like the proposal, requires that the applicant maintain records of the initial sale of each belt having an approval marking. Under the final rule, the record must be retained for at least 5 years following the initial sale. Information on initial sales should include the sale date, the customer name and address, and the belt identification by slab, batch or lot. A five-year retention period conforms to MSHA's audit cycle.

During the rulemaking process and at each of the public hearings, MSHA requested comments on the 5-year retention period for sales records. Commenters suggested that sales records be kept as long as the belt is in use, whether it be at the operation it was originally purchased for or other locations. In addition, a commenter stated that in order to keep the record straight, MSHA should require that all sales records follow the belt from the time of purchase to its end-of-service life. Based on MSHA's experience and data, a five-year retention period is adequate to discover any potential hazardous defects, such as through MSHA's post-approval audit process.

Final § 14.8 includes requirements for quality assurance. MSHA received no comments on the proposal.

Final § 14.8(a), like the proposal, requires approval holders to flame test a sample of each batch, lot, or slab of conveyor belts; or flame test or inspect a sample of each batch or lot of the materials that contribute to the flame-resistance characteristic. This assures that the finished conveyor belt slab will meet the flame-resistance test. MSHA received no comments on the proposal.

Final § 14.8(b), like the proposal, requires that the instruments used for quality assurance under paragraph (a) be calibrated according to the instrument manufacturer's specifications. Under this final rule, instruments must be calibrated using standards set by the National Institute of Standards and Technology, U.S. Department of Commerce, or other nationally or internationally recognized standards. The final rule also requires that the instruments used be accurate to at least one significant figure beyond the desired accuracy. This calibration sequence is consistent with the procedure under existing § 7.7. MSHA received no comments on the proposal.

Final § 14.8(c), like the proposal, requires control of production in accordance with the approval. If a third party is assembling or manufacturing all or part of the approved belt, the final rule requires that the approval holder assure that the product is manufactured as approved. MSHA received no comments on the proposal.

Final § 14.8(d), like the proposal, requires approval holders to immediately notify the MSHA Approval and Certification Center of any information that a conveyor belt has been distributed, which does not meet the specifications of the approval. It also requires that the notification include a description of the nature and extent of the problem, the locations where the conveyor belt has been distributed, and the approval holder's plans for corrective action. Under the final rule, notification could be by telephone, e-mail, facsimile, or other similar means. In addition, corrective action may include recalling the conveyor belt or restricting its use pending resolution of the defect. MSHA received no comments on the proposal.

Final § 14.9 is derived from existing § 18.9. It addresses the disclosure of information. Final § 14.9(a), like the proposal, provides that all proprietary information concerning product specifications and performance submitted to MSHA by the applicant will be protected from disclosure. MSHA received no comments on the proposal.

Final § 14.9(b), like the proposal, provides that MSHA will notify applicants or approval holders of requests for disclosure of information concerning their conveyor belts, and provide them an opportunity to present their position prior to any decision on disclosure. MSHA received no comments on the proposal.

Under the final rule, MSHA will treat information on product material, specifications, and processes as protected under exemption 4 of FOIA. Exemption 4 exempts from disclosure ''trade secrets and commercial or financial information'' obtained from an outside source and ''privileged or confidential.'' (5 U.S.C. 552(b)(4)). Under the Department's regulations at 29 CFR 70.26, *Business information,* MSHA will notify the applicant of any FOIA request seeking information submitted by the applicant under the final rule. The applicant then will have a reasonable period of time in which to object to disclosure. An objecting applicant must submit a ''detailed written statement'' showing ''why the information is a trade secret or commercial or financial information that is privileged or confidential'' [29 CFR 70.26(e)]. MSHA will consider the applicant's objections in deciding whether to disclose the information. If MSHA determines that the FOIA

requires disclosure over the applicant's objections, MSHA will notify the applicant of the documents to be disclosed prior to the disclosure date (unless MSHA learns that the material already has lawfully been made public) [29 CFR 70.26(f), (g)]. Under 29 CFR 70.26(b), when submitting documents, applicants should identify the documents they wish to protect by marking them (such as stamping each page ''Confidential''). MSHA notes that it has no authority under the FOIA to withhold applicant documents requested by a Congressional oversight committee.

Final § 14.10 provides for post-approval product audits. Final § 14.10(a), like the proposal, provides that approved conveyor belts are subject to periodic audits by MSHA to determine conformity with the technical requirements upon which the approval was based. Under the final rule, MSHA will select representative conveyor belts to be audited and, upon request, the approval holder may obtain any final audit report.

One commenter asked if the audit procedures would be applied equally to domestic and foreign manufacturers who are approval holders. As MSHA stated during the public hearings, all approval holders will be held to the same approval and audit procedures, regardless of location.

Other commenters stated that the proposal would only allow the approval holder to receive the final post-approval product audit report upon request to MSHA. They stated that the distribution of similar reports involving respirators are published and distributed by NIOSH to the mining industry, and believed audit reports should be distributed, or at least made available, to the entire industry. Commenters added that they would also like to have these reports provided to the representative of miners and the operator be required to post a copy on the mine bulletin board. MSHA conducts post-approval product audits under other existing regulations, such as § 7.8(a), and consistent with both the proposal and the final rule, provides copies to the approval holders upon their request. The Agency has not experienced any problems or issues with the existing regulations, and the final rule is the same as the proposal. In the event there is a discrepancy between the manufactured product and the technical requirements upon which the approval is based, the approval holder would have to rectify the discrepancy and meet the requirements in this final rule.

Final § 14.10(b), like the proposal, requires that no more than once a year, except for cause, the approval holder, at MSHA's request, make 3 samples of an approved conveyor belt of the size specified in § 14.5 available to MSHA for an audit at no cost to MSHA. The final rule also allows representatives of the applicant and other persons agreed upon by MSHA and the applicant to be present during audit tests and evaluations; however, if MSHA receives a request from others to observe tests, the Agency will consider it.

Commenters stated that the representative of miners should be given an opportunity to be present during any testing or audit conducted by the Agency. The Agency agrees with the comments that requests to observe tests should be considered under the same conditions as explained in final § 14.3, which is designed to protect proprietary rights of approval holders and not delay the audit process.

Final § 14.10(c), like the proposal, provides that conveyor belts will be subject to audit for cause at any time MSHA believes the product is not in compliance with the technical requirements of the approval. Audits allow MSHA to determine whether products are being manufactured as approved. MSHA will select the product and may obtain products from sources other than the manufacturer, such as distributors or wholesalers.

In determining which products to audit, MSHA will consider a variety of factors such as whether the manufacturer has previously produced the product or similar products, whether the product is new or part of a new product line, or whether the product is intended for a unique application or limited distribution. MSHA may also consider product complexity, the manufacturer's previous product audit results, extent of the product's use in the mining community, and the time elapsed since the last audit or since the product was first approved.

There are other circumstances or causes when additional audits may be necessary to verify compliance with this final rule. These include complaints about the safety or performance of a product, product changes that have not been approved, audit test results that warrant further testing to determine compliance, and evaluation of corrective action taken by an approval holder. Some commenters supported these audit procedures but insisted that a prompt notice of the findings of such audits be made available to all interested parties, including the miners' representatives. In the event that an audit finds a discrepancy between the manufactured product and the technical requirements upon which the approval is based, requirements contained in § 14.11 will be followed.

Final § 14.11, like the proposal, includes requirements for revocation. Final § 14.11(a)(1) and (2), like the proposal, provides that MSHA may revoke for cause an approval issued under the final rule if the conveyor belt (1) fails to meet the technical requirements of the approval, or (2) creates a danger or hazard when used in an underground coal mine. MSHA received no comments on the proposal.

Final § 14.11(b), like the proposal, provides that prior to revoking an approval, the approval holder will be informed in writing of MSHA's intention to revoke. Under the final rule, the notice will (1) explain the reasons for the proposed revocation; and (2) provide the approval holder an opportunity to demonstrate or achieve compliance with the product approval requirements.

Commenters suggested that if MSHA issues a revocation notice, other means besides the internet be used, since not all mine operations and miners have access to the internet. MSHA's existing practice is to notify the mining community of equipment and safety alerts by various means, including the internet, the Agency's district offices and inspectors, and occasionally, via mail.

Final § 14.11(c), like the proposal, provides that upon request, the approval holder will be given the opportunity for a hearing. MSHA's practice is to treat approval holders as ''licensees'' under the Administrative Procedure Act (APA, 5 U.S.C. 558). Consistent with this practice, final § 14.11(b) provides that approval holders be given due process considerations prior to revocation of an approval. These considerations include being provided with (1) a written notice of the Agency's intent to revoke a product approval; (2) an explanation of the reasons for the proposed revocation; and (3) an opportunity to demonstrate or achieve compliance with the technical requirements for approval. Commenters suggested that if a hearing is held, miners and their representatives should be able to participate. The administrative procedures for revocation hearings, including participation, will be determined on a case-by-case basis consistent with requirements contained in the APA.

Final § 14.11(d), which is changed from the proposal, requires that if a conveyor belt poses an imminent danger to the safety or health of miners, an approval may be immediately suspended without written notice of the Agency's intention to revoke.

Commenters suggested that MSHA reconsider the proposal since the immediate suspension of conveyor belt approval necessitating removal of conveyor belt could pose serious operational difficulty for mine operators and their employees. They suggested that MSHA develop an expedited procedure to validate any concerns identified and to establish a manageable approach to expeditiously remedy such concerns. The commenters stated that district managers should have the authority to approve alternative approaches to ''immediate removal.'' Such approaches could establish agreed upon safety precautions permitting miners to remain at work during a conveyor belt removal/replacement cycle.

This final requirement would only be applicable in the event that MSHA discovers during an audit that a conveyor belt poses an imminent danger to miners. However, MSHA believes that it is unlikely that an audit would result in a massive recall of conveyor belt. Under the final rule, MSHA intends that the severity of the hazard identified in the audit would dictate the corrective action required. MSHA believes that, should revocation of an approval become necessary, the Agency will be able to develop procedures that will allow any identified defect to be remedied while maintaining safety and health protection for miners.

Consistent with the Agency's existing practice, revocation of an approval, as the commenter suggests, is a very serious action, taken only to correct a condition likely to cause death or serious physical harm. MSHA's existing regulations in Parts 7 and 15 provide that the Agency may suspend an approval without written notice, if there is an imminent danger to miners, pending completion of revocation procedures. The final rule is changed to provide that in the case of an imminent danger to miners, the approval may be immediately suspended. This is consistent with MSHA's other approval regulations.

MSHA believes that removal of belts that pose an imminent danger is necessary to protect miners from potential injury and life-threatening hazards. Once an approval is suspended, MSHA will notify the mining community of this action.

Final § 14.20, like the proposal, requires that conveyor belts for use in underground coal mines be flame resistant and tested under final § 14.20 (a) or (b). Under final paragraph (a), testing must be in accordance with the flame test specified in final § 14.22. Under final paragraph (b), testing must be in accordance with an alternate test determined by MSHA to be equivalent under existing § 6.20 and final § 14.4(e). This testing would assure that conveyor belts meet the specifications in the final rule, are difficult to ignite, and are highly resistant to flame propagation. MSHA recognizes that other tests may exist or be developed in the future which could be appropriate for evaluating flame-resistant qualities of conveyor belt for use in underground coal mines. Under final paragraph (b), once a determination of equivalency is made, MSHA will publish a notice in the **Federal Register**. MSHA received no comments on the proposal.

Final § 14.21, like the proposal, describes the principal parts of the BELT apparatus used to test for flame resistance of conveyor belts. Final § 14.21(a), like the proposal, requires a horizontal test chamber 66 inches (167.6 cm) long by 18 inches (45.7 cm) square (inside dimensions). The chamber dimensions were established from the large-scale belt flammability studies. The test chamber must be constructed from 1 inch (2.5 cm) thick Marinite I®, or equivalent insulating material. Should minor cracking occur in the Marinite I®, it can be repaired using an appropriate sealant. However, the Marinite I® or equivalent insulating material must be replaced and not repaired if the crack or break is across the total thickness. MSHA received no comments on the proposal.

Final § 14.21(b), like the proposal, requires a 16-gauge (0.16 cm) stainless steel duct section, tapering over at least a 24-inch (61 cm) length from a 20-inch (51 cm) square cross-sectional area at the test chamber connection to a 12-inch (30.5 cm) diameter exhaust duct, or equivalent. The interior surface of the tapered duct section must be lined with ½-inch (1.27 cm) thick ceramic blanket insulation or equivalent insulating material. The use of stainless steel minimizes corrosion and the tapered duct section allows a smooth airflow to enter the exhaust duct. The tapered duct must be lined with ceramic blanket insulation to minimize high duct temperatures and thermal expansion. MSHA received no comments on the proposal.

Final § 14.21(c), like the proposal, requires a U-shaped gas-fueled impinged jet burner igniting source, measuring 12 inches (30.5 cm) long and 4 inches (10.2 cm) wide, with two parallel rows of 6 jets each. Each jet must be spaced alternately along the U-shaped burner tube. The 2 rows of burner jets must be slanted so that they point toward each other and the flame from each jet impinges upon each other in pairs. The burner fuel must be at least 98 percent methane (technical grade) or natural gas containing at least 93 percent methane.

A burner unit available from the Solarflo® Corporation Model U–10, using Model Number 640 jets producing 7,500 BTU per hour per jet, is suitable to comply with these specifications. This burner unit, which is an impinged jet burner, is the burner type used as the igniting source in the BELT. Any other burner unit which meets the specifications would be appropriate. The burner in the final rule was referenced because it is commercially available and provides a reliable, reproducible ignition source that can burn methane or natural gas. The BELT results correlate well with the large-scale belt flammability test results when using the burner in the final rule and gaseous fuel in conjunction with the other parameters. MSHA received no comments on the proposal.

Final § 14.21(d), like the proposal, requires a removable steel rack, consisting of 2 parallel rails and supports that form a 7 ± ⅛ inches (17.8 ± 0.3 cm) wide by 60 ± ⅛ inches (152.4 ± 0.3 cm) long assembly to hold a belt sample. Under final paragraph (d)(1), like the proposal, the 2 parallel rails, with 5 ± ⅛ inches (12.7 ± 0.3 cm) space between them comprise the top of the rack. The rails and supports must be constructed of slotted angle iron with holes along the top surface. Typically, commercially available, 1 inch (2.5 cm) by 1¾ inch (4.4 cm) by ⅛ inch (0.3 cm) thick angle iron with predrilled ¼ inch (0.6 cm) diameter holes spaced 1 inch (2.5 cm) apart is used. Under final paragraph (d)(2), the top surface of the rack must be 8 ± ⅛ inches (20.3 ± 0.3 cm) from the inside roof of the test chamber.

The rack materials and dimensions were selected so that the rack adequately supports the belt sample and withstands repeated tests with only minor warping due to heat while minimizing the rack's thermal mass. The distance from the top surface of the rack to the inside roof of the test chamber was established based on the comparison of the test results and the development of correlation parameters with the large-scale belt flammability studies.

The BELT apparatus does not contain any pollution control system for exhaust fumes created during flame tests. If an applicant chooses to build a test apparatus and perform the BELT method for research or quality assurance purposes, some type of effluent control may be required to meet State and local

emission standards. MSHA received no comments on the proposal.

Final § 14.22, like the proposal, specifies the test for flame resistance of conveyor belts. The final rule addresses variables that have an appreciable effect on the test results in order to maintain consistency in the testing method. Small changes in barometric pressure, humidity, and ambient temperature should not have a significant effect on the test results. Published literature indicates that small changes in atmospheric pressure have little or no effect on flame propagation. Variations in ambient temperature did not show a trend in either decreasing or increasing the burn damage of belts tested. A small increase or decrease of relative humidity will not have a significant effect on the flame propagation because conveyor belts are typically impervious to moisture.

Final § 14.22(a), like the proposal, specifies the test procedure sequence. Technical dimensions and tolerances that are critical to the proper conduct of the test and to maintain consistency in the test method are specified in this final rule, while dimensions that have no effect on the test results are specified without a tolerance and are indicated as approximate. MSHA received no comments on the proposal.

Final § 14.22(a)(1), like the proposal, requires that three belt samples, 60 ± ¼ inches (152.4 ± 0.6 cm) long by 9 ± ⅛-inches (22.9 ± 0.3 cm) wide, be laid flat at 70 ± 10 °F (21 ± 5 °C) for at least 24 hours prior to the test. It assures that the samples are at laboratory temperatures, facilitates sample mounting, and minimizes curling during the test. MSHA received no comments on the proposal.

A conveyor belt that has been rolled prior to testing is more likely to rebound to the rolled position during testing. This action is considered curling, and may lead to erroneous test results. Samples which have been rolled prior to testing can develop sufficient curling forces to overcome the holding capabilities of the cotter pins installed to retain the sample on the rack. Should curling occur, MSHA would need to test additional samples in order to assure that reliable test results have been obtained. The Agency has determined that the use of flat, unrolled samples greatly reduces the occurrence of curling.

Final § 14.22(a)(2), like the proposal, requires that for each of three tests, one belt sample be placed on the rails of the rack with the load carrying surface facing up so that the sample extends 1 ± ⅛ inch (2.5 ± 0.3 cm) beyond the front of the rails and 1 ± ⅛ inch (2.5 ± 0.3 cm) from the outer lengthwise edge of each rail. This centers the longitudinal axis of the sample along the centerline of the rack with the first inch of the sample in the ignition area and not in contact with the rack. The 1 ± ⅛ inch (2.5 ± 0.3 cm) overlap that extends beyond the front of the rail facilitates ignition of the belt sample by minimizing the thermal heat sink created by the sample rack. A greater overlap can result in the sample curling or pulling back from the burner during the ignition period. Many PVC belts are constructed with a solid woven carcass and the top or bottom cover is not designated. If a belt is constructed without a designated top cover, either side of the belt could be mounted as the load carrying surface. MSHA received no comments on the proposal.

Final § 14.22(a)(3), like the proposal, requires the sample to be fastened to the rails of the rack with steel washers and cotter pins. The final rule provides the following requirements. The cotter pin must extend at least ¾ inch (1.9 cm) below the rails. Equivalent fasteners may be used. A series of 5 holes approximately 9/32 inch (0.7 cm) in diameter must be made along both edges of the belt sample, starting at the first rail hole within 2 inches (5.1 cm) from the front edge of the sample. The next hole must be made 5 ± ¼ inches (12.7 ± 0.6 cm) from the first, the third hole must be made 5 ± ¼ inches (12.7 ± 0.6 cm) from the second, the fourth hole must be made approximately midway along the length of the sample, and the fifth hole must be made near the end of the sample. A washer must be placed over each sample hole, and a cotter pin must be inserted through the hole and spread apart to secure the sample to the rail. MSHA received no comments on the proposal.

Under the final rule, the locations of the fasteners were chosen so that the majority (6 of 10) would be in the ignition area to minimize the belt sample pulling away from the burner, or lifting and curling during the ignition period. Specific fastener locations with tolerances for holes 4 and 5 were not identified. It is MSHA's experience that the exact location of these fasteners is not critical to the retention of the sample and does not influence the test results. Additional fasteners can be used in the ignition region for belts that lift excessively. The fasteners facilitate the secure mounting of the belt sample and are too small to influence the test results by heat absorption, even if additional fasteners are used.

Final § 14.22(a)(4), like the proposal, requires centering the rack and sample in the test chamber with the front end of the sample 6 ± ½ inches (15.2 ± 1.27 cm) from the entrance. This location reduces the disturbance of the airflow entering the test chamber. The location is based on the correlation of the BELT results to the results of large-scale belt flammability studies. MSHA received no comments on the proposal.

Final § 14.22(a)(5), like the proposal, requires measuring the airflow with a 4-inch (10.2 cm) diameter vane anemometer, or equivalent device, placed on the centerline of the belt sample 12 ± ½ inches (30.5 ± 1.27 cm) from the entrance of the chamber. Airflow passing through the chamber must be adjusted to 200 ± 20 ft/min (61 ± 6 m/min). MSHA received no comments on the proposal.

The airflow and measuring location are based on comparison of the test results with the large-scale belt flammability studies. MSHA identified the variables that affect the conditions of the test, such as air velocity and the ambient air and tunnel temperatures while conducting several hundred belt flame tests.

Final § 14.22(a)(6), like the proposal, requires that, before starting the test on each sample, the inner surface temperature of the chamber roof be measured at points 6 ± ½, 30 ± ½, and 60 ± ½ inches (15.2 ± 1.27, 76.2 ± 1.27, and 152.4 ± 1.27 cm) from the front entrance must not exceed 95° Fahrenheit (35° Centigrade) at any of these points with the specified airflow passing through the chamber. In addition, the temperature of the air entering the chamber during the test on each sample must not be less than 50° Fahrenheit (10° Centigrade).

Under the final rule, the ½ inch (1.27 cm) tolerance is needed for the temperature measurement points to maintain consistency of the test conditions. These temperature limits are specified to maintain the repeatability of the test results and to maintain the comparability obtained with the large-scale belt flammability studies. An upper limit on airflow and a lower limit on the temperature of the air entering the test chamber are included as test control parameters. These test parameters are designed to assure the test chamber temperature meets certain restrictions for each of the three tests. MSHA received no comments on the proposal.

Final § 14.22(a)(7), like the proposal, requires centering the burner in front of the sample's leading edge with the plane, defined by the tips of the burner jets, ¾ ± ⅛ inch (1.9 ± 0.3 cm) from the front edge of the belt. The burner must be centered in front of the sample's leading edge, so that when ignited the

flames from the two rows of jets impinge in front of the belt's edge and distribute uniformly on the top and bottom surfaces of the sample. A ⅛ inch tolerance was added to the location dimension for the burner jets. This tolerance is important because it maintains the consistency of the test method. The alignment of the burner provides for the uniform heating of the sample, which is necessary to maintain the consistency of the test results.

The exact burner orientation needed to provide uniform distribution of flame on the top and bottom surfaces of the test sample may vary depending upon the belt sample's thickness. Based upon comparison tests and experience gained in developing the BELT method, the burner must be slanted downward from the vertical, at approximately a 15° angle, and located ¾ ± ⅛ inch (1.9 ± 0.3 cm) from the front edge of the belt. Slanting of the burner compensates for the buoyancy of the burner flames. The appropriate burner alignment necessary for uniform distribution of flame may be determined by adjustments prior to igniting the samples under test. MSHA received no comments on the proposal.

Final § 14.22(a)(8), like the proposal, requires that, with the burner lowered away from the sample, the gas flow to the burner must be set at 1.2 ± 0.1 standard cubic feet per minute (SCFM) (34 ± 2.8 liters per minute) and be maintained throughout the 5 to 5.1 minute ignition period. One standard cubic foot is the amount of gas which occupies one cubic foot at 72 °F and one atmosphere pressure (1 cubic liter at 22 °C and 101 kilopascals). The specified gas flow provides a stable flame and is based on a comparison of the test results with the large-scale belt flammability studies. MSHA received no comments on the proposal.

Final § 14.22(a)(9), like the proposal, provides that after applying the burner flame to the front edge of the sample for a 5 to 5.1 minute ignition period, lower the burner away from the sample and extinguish the flame. MSHA received no comments on the proposal.

Final § 14.22(a)(10), like the proposal, provides that after the completion of each test, the undamaged portion across the entire width of the sample be determined. Determining the undamaged portion across the entire width of the sample is necessary for specifying acceptable performance of the conveyor belt. Blistering without charring does not constitute damage because blistering could result from heat exposure rather than the presence of flame. MSHA received no comments on the proposal.

Final § 14.22(b), like the proposal, requires that each tested sample must exhibit an undamaged portion across its entire width. This requirement is based on the correlation of the BELT results to the results of large-scale belt flammability studies. MSHA received no comments on the proposal.

Final § 14.22(c), like the proposal, provides that MSHA may modify the procedures of the flammability test for belts constructed of thicknesses more than 3/4 inch (1.9 cm). No comments were received on this provision.

Final § 14.23, like the proposal, provides that MSHA may approve a conveyor belt that incorporates technology for which the requirements of this final rule are not applicable if the Agency determines that the conveyor belt is as safe as those which meet the requirements of the final rule. This final rule is intended to facilitate the introduction of new technology or new applications of existing technology with respect to conveyor belts. MSHA received no comments on the proposal.

Part 75—Mandatory Safety Standards—Underground Coal Mines Subpart L—Fire Protection

Final § 75.1108 requires the use of improved flame-resistant conveyor belt, as approved under Part 14, in underground coal mines. This requirement is consistent with Panel Recommendation 3.

Final § 75.1108(a) is changed from the proposal and allows mine operators until December 31, 2009 to place in service in underground coal mines conveyor belts approved under Part 14 or accepted under existing Part 18.

Final § 75.1108(b) is changed from the proposal and requires that effective December 31, 2009, conveyor belts placed in service must be approved under Part 14. In the event that MSHA determines that Part 14 approved belt is not available, the Agency will consider an extension of the one-year transition period. Notice of an extension would be published in the **Federal Register**.

Final § 75.1108(c) is added in the final rule in response to comments and to clarify the Agency's intent with respect to the use of existing conveyor belt. It requires that effective December 31, 2018, all conveyor belts used in underground coal mines must be approved under Part 14.

Commenters were opposed to permitting the purchase of either Part 18 or Part 14 belt for a period of one year because mine operators could stockpile Part 18 belt, and use that belt underground for an extended period of time. They stated that Part 14 belt should be required to be purchased and installed in the mine upon the effective date of the final rule. These commenters stated that mine operators should only be permitted to use Part 18 belts already in service or in their inventory.

In response to comments, MSHA included a new paragraph in the final rule that clarifies the Agency's intent with respect to the use of existing belt. Under the final rule, operators will have up to ten years to use existing belt, which has been placed into service by December 31, 2009. This assures that all belt used in underground coal mines will meet the requirements of Part 14 within ten years.

The final rule language also has been changed from the proposal to include the phrase, ''placed in service'' instead of ''purchased for use.'' The Agency intends that ''placed in service'' clarifies that all new conveyor belts installed one year after the publication date of this final rule will comply with Part 14 requirements.

A commenter stated that mine operators should be permitted to continue to remove belts, trim them down, and re-install the belt in their underground mines. Under the final rule, mine operators may continue these practices if the belts have been placed in service in their mines prior to or during the one-year transition period, that is, the one-year period when either Part 18 or Part 14 belt may be purchased. Belts that have been placed in service prior to or during the one-year transition period can be used until December 31, 2018. This belt may not be marketed for use in other underground coal mining operations after December 31, 2009, but may be used by the same mine operator.

Existing § 75.1108–1 is removed because it is no longer needed.

3. Conforming Amendments

This final rule requires conforming amendments to existing approval regulations in Parts 6 and 18.

Part 6—Testing and Evaluation by Independent Laboratories and Non-MSHA Product Safety Standards

Section 6.2 concerning the definition of ''Equivalent non-MSHA product safety standards,'' and § 6.20(a)(1) concerning applications for equivalency, are both amended by adding Part 14 (Conveyor Belts in Underground Coal Mines). These are administrative and conforming provisions.

Part 18—Electric Motor-Driven Mine Equipment and Accessories

Part 18 is amended by removing the term ''conveyor belt'' from existing

§§ 18.1, 18.2, 18.6(a), 18.6(i), 18.9(a) and 18.65. The revised sections of Part 18 would only relate to acceptance of hoses, and existing § 18.6(c) would be removed and reserved. MSHA is making these conforming amendments to Part 18 because applications for approval of conveyor belts will be considered only under Part 14.

B. Fire Prevention and Detection and Approval of the Use of Air From the Belt Entry To Ventilate Working Sections

1. General

This final rule enhances miner safety and health by including improved requirements for the use of air from the belt entry, belt entry and conveyor maintenance, and fire prevention and detection. This final rule includes requirements on: Approval of using air from the belt entry to ventilate working sections; replacement of point-type heat sensors with carbon monoxide sensors in all coal mines; training of AMS operators; requirements for escapeways; limits on respirable dust in the belt entry; maximum and minimum air velocities in the belt entry; standardized tactile signals for lifelines; use of smoke sensors in mines using air from the belt entry; and improved belt entry maintenance.

Consistent with the Panel's recommendations this final rule, like the proposal, includes requirements applicable to mines that use air from the belt entry to ventilate a working section, and requirements applicable to all underground coal mines. The requirements applicable to all underground coal mines include: Airlocks along escapeways; minimum belt entry air velocity; standardized tactile signals for lifelines; maintaining higher ventilating pressures in the primary escapeway; replacing point-type heat sensors with carbon monoxide sensors for fire detection in belt entries; and belt entry maintenance.

In addition, this final rule, like the proposal, revises existing requirements related to the use of carbon monoxide sensors for fire detection along belt lines in all mines. These include sensor spacing, establishing a warning level, responses to warning and malfunction signals, testing and calibration requirements, and minimum air velocity to incorporate the use of carbon monoxide sensors.

This section of the final rule addresses the following Panel recommendations:

- Recommendation 5—Belt entry and conveyor belt maintenance;
- Recommendation 6—Special requirements for the use of belt air;
- Recommendation 7—Belt air approval recommendation;
- Recommendation 8—Discontinuing point-type heat sensors;
- Recommendation 9—Smoke sensors;
- Recommendation 10—Use of diesel-discriminating sensors;
- Recommendation 12—AMS operator training certification;
- Recommendation 13—Minimum and maximum air velocities;
- Recommendation 14—Escapeways and leakage;
- Recommendation 15—Lifelines;
- Recommendation 16—Point-feeding; and
- Recommendation 17—Respirable dust.

2. Discussion of the Final Rule

Part 48—Training and Retraining of Miners Subpart B—Training and Retraining of Miners Working at Surface Mines and Surface Areas of Underground Mines

Final § 48.27(a), like the proposal, revises the existing rule to require that miners assigned to new work tasks as AMS operators be trained before they perform these duties. This requirement is consistent with Panel recommendation 12, that MSHA require the qualification and certification of AMS operators. This requirement applies to AMS operators that are monitoring methane or carbon monoxide sensors used to meet the requirements of: §§ 75.323(d)(1)(ii)—Actions for excessive methane; 75.340(a)(1)(ii) and 75.340(a)(2)(ii)—Electrical installations; 75.350(b) and 75.350(d)—Use of air from a belt entry to ventilate working sections; or 75.362—On-shift examinations. MSHA believes that AMS operators must have the background, experience, and training to assure that proper actions are taken in response to AMS signals, including alerts, alarms, and malfunctions, to provide the highest degree of safety to all affected miners.

Existing § 48.23 requires that a training plan be approved by MSHA for specific tasks, and that the training be provided prior to the miner performing those tasks. The Agency has added AMS operators to the list of tasks covered by this provision.

A commenter stated that AMS operators should participate in a simulated mine emergency as part of the initial training. While mine operators may elect to include a simulated mine emergency in the initial task training for AMS operators, the final rule does not require simulated mine emergency training. The responsible person designated under existing § 75.1501 is required to take charge during a mine emergency. That person must be trained annually in a course of instruction in mine emergency response.

Another commenter stated that this task training duplicates the annual training already required for AMS operators and qualified persons. Under the final rule, the initial task training and annual retraining are separate requirements. The initial task training is designed to assure that the AMS operator has the necessary skills to operate the AMS prior to assuming responsibility for that task. The annual retraining in § 75.351(q) is designed to reinforce existing skills and to assure that the AMS operator remains capable of doing the task, with an understanding of current mining operations.

Part 75—Mandatory Safety Standards—Underground Coal Mines

Subpart B—Qualified and Certified Persons

Section 75.156—AMS Operator, Qualifications

Final § 75.156(a), like the proposal, is new and requires that to be qualified as an AMS operator, a person shall be provided with task training on duties and responsibilities at each mine where an AMS operator is employed in accordance with the mine operator's approved Part 48 training plan. This requirement is consistent with Panel recommendation 12, that MSHA require the qualification and certification of AMS operators.

MSHA recognizes that a significant portion of the knowledge necessary for an AMS operator is mine-specific and must be tailored to conditions at each mine. This task training must be provided at each mine where the AMS operator performs these duties due to different AMS designs, variations in ventilation plans and systems, complexities of evacuation plan requirements, and uniqueness of the mine configurations. MSHA has developed a training guide to assist mine operators in identifying essential elements to be included in the training plan.

A commenter stated that this training should not be included with the Part 48 annual retraining. This commenter was concerned about diluting the Part 48 training and wanted the AMS operator training to be separate.

A commenter asked if MSHA would develop an initial training program for AMS operators. A commenter also stated that a copy of the initial training plan should be furnished to miners or a representative of miners two weeks

before its submission to the district manager.

The new initial task training for AMS operators does not impact other existing training requirements in Part 48. MSHA has developed a model training program that mine operators can tailor to fit specific mining conditions and equipment at their mines. Consistent with existing § 48.23(d), mine operators must furnish a copy of the training plan to a miner's representative two weeks prior to its submission to the district manager.

Final § 75.156(b), like the proposal, requires that an AMS operator must be able to demonstrate to an authorized representative of the Secretary that he/she is qualified to perform the assigned tasks. The inspector will make a determination about the AMS operator's qualifications during regular inspections. In making this determination, the inspector will ask the AMS operator questions regarding: The responses to AMS signals; notification requirements; approved mine plans; recordkeeping requirements; and AMS operating requirements. This assures that the AMS operator fully understands how to operate and respond to the AMS.

Subpart D—Ventilation

Actions for Excessive Methane

During the rulemaking process and at each of the public hearings, MSHA solicited comments on whether the Agency should establish a new provision to require that changes or adjustments be made to reduce the concentration of methane when a range between 0.5 and 1.0 percent methane is present in the belt entry as measured 200 feet outby the section loading point. In addition, MSHA specifically requested comments on the level at which changes or adjustments should be made. MSHA received no comments regarding a specific level at which changes or adjustments should be made.

The Agency's request for comments was based on Panel Recommendation 18, which stated that the district manager should regularly evaluate any working section that has methane readings at or above 0.5% methane, measured 200 feet outby the tailpiece of the belt. This recommendation applied only to mines that use air from the belt entry to ventilate working sections.

A commenter agreed with the Panel's recommendation and supported a new standard to require that corrective actions be made when methane levels range between 0.5 and 1.0 percent, measured 200 feet outby the section loading point. This commenter did not recommend a specific level, but did state that methane levels should be reduced to the lowest possible level.

Several commenters were opposed to a new standard stating that existing standards, combined with methane limits and tests already in place for the working section, provide adequate protection. Commenters also stated that any attempt to reduce methane concentrations in the belt entry below 1.0 percent could create undesired pressure differentials from the belt entry to the intake air course. MSHA agrees that this may be true for blowing ventilation systems, but not for exhausting ventilation systems.

Further, according to commenters, adjustments to reduce the methane concentration in the belt entry to a range below 0.5 to 1.0 percent may not be possible because intake methane levels up to 1.0 percent are permitted. MSHA notes that existing standards require that when 1.0 percent or more methane is present in the belt entry, changes or adjustments must be made to reduce the concentration to less than 1.0 percent.

Consistent with the Panel's recommendation, MSHA is not including a new standard in the final rule, but intends to change the Agency's inspection procedures to require that inspectors measure methane in the belt entry at a point 200 feet outby the section tail piece. This will allow the Agency to determine the effect of the use of air from the belt entry on methane levels in the working section.

The Agency recognizes that moving air from the intake to the belt may reduce the methane concentration 200 feet outby the section loading point, but may not result in reduced methane concentrations on the working section because the total air quantity delivered to the section will not be increased.

Section 75.333(c)(4)—Ventilation Controls

Final § 75.333(c)(4), like the proposal, is a new provision requiring that an airlock be established where the air pressure differential between air courses creates a static force exceeding 125 pounds on closed personnel doors along escapeways.

The final rule is responsive to Panel Recommendation 14 that personnel doors along escapeways should be installed to establish an airlock when the static force created by the pressure differential exceeds 125 pounds. High pressure differentials on doors can lead to serious injuries to miners opening and closing these doors. Providing an airlock between entries provides a safe means for miners to travel between two air courses. An airlock consists of a pair of doors installed in ventilation controls between two air courses, which form a pressure equalizing chamber. A miner would open the first door, enter the airlock, and close the door. After equalizing the pressure, the miner can then open the second door and move into the adjacent entry. The need for safe access is critical during a mine emergency evacuation when miners must move between adjacent air courses.

The Panel recommended a standard based upon the force on the personnel door of 125 pounds. This force on any specific door is dependent upon the pressure differential across the ventilation control, and the surface area of the personnel door. For the same pressure differential, the force required to open a personnel door increases proportionately with surface area.

In order to calculate the force exerted by a pressure differential, the pressure differential and door dimensions must first be determined. As reflected in the Panel's example, a 125-pound force limitation on a 3-foot by 4-foot door would be created by a pressure differential of 2.0 inches of water. A 3-foot by 4-foot personnel door has an area of 1,728 square inches ($3' \times 4' = 12$ square feet $\times$ 144 in^2/ft^2 = 1,728 square inches). For a force of 125 pounds, the distribution is 0.0725 pounds per square inch (125 lb $\div$ 1,728 in^2 = 0.0725 psi). Using the conversion factor, 1 psi = 27.68 inches of water, the equivalent pressure differential can be calculated to be 2.0 inches of water (0.0725 psi $\times$ 27.68 in. H_2O/psi = 2.0 inches of water).

A commenter supported the proposal to require airlocks, but suggested spacing the airlocks at intervals not to exceed 1,000 feet for the entire length of the escapeway from the section to the surface. Consistent with the Panel recommendation, MSHA believes that airlocks should only be required when the force on a personnel door between air courses along escapeways could result in injury to miners when opening or closing the door. If the force is less than 125 pounds, miners should not experience difficulty opening or closing the door. Requiring airlocks on doors with lower pressures would unnecessarily delay miners in moving between escapeways.

Some commenters suggested the proposal be modified to allow the use of alternative measures such as flaps and sliders to comply with the proposed requirement for airlocks. Another suggested that airlocks only be required when alternatives such as hinged or sliding doors or flaps do not reduce the force on the door to less than 125 pounds. In the preamble to the proposal, MSHA stated mine operators may have

alternatives to establishing airlocks, including reducing the size of a personnel door, providing a flap, or sliding door, which may reduce the static pressure to below 125 pounds. Under the final rule, the Agency will allow alternatives to reduce the force on a door. Airlocks are only required when the force exceeds 125 pounds. Mine operators have the option to use alternatives to reduce the force on a door.

A commenter suggested that the final rule should state that airlocks only be required between adjacent escapeways when the force on the door exceeds 125 pounds. However, such a change would not be consistent with the Panel's recommendation. In the final rule, MSHA intends that airlocks be established where the air pressure differential between air courses along escapeways creates a static force exceeding 125 pounds on closed personnel doors.

During the rulemaking process and at the public hearings, the Agency solicited comments on other suitable pressures. No comments were provided. MSHA also solicited comments on the number of airlocks that would be required under the proposal and the associated cost. One commenter provided data from 14 mines, which identify the number of airlocks required in each mine based upon the proposed rule. MSHA has considered this comment in the regulatory economic analysis.

Section 75.350—Belt Air Course Ventilation

Final § 75.350(a)(2), like the proposal, revises the existing standard. It requires that one year after the publication of the final rule, the air velocity in the belt entry must be at least 50 feet per minute. It also requires that air velocities be compatible with all fire detection systems and fire suppression systems used in the belt entry.

MSHA has revised the existing standard because of changes to final § 75.1103–4 (fire detection systems), which replaces point-type heat sensors for early-warning and detection of conveyor belt fires with carbon monoxide fire sensor systems in all belt entries. When point-type heat sensor systems are used for fire detection, no minimum velocity in the belt entry is needed because the sensors are heat-activated. When carbon monoxide sensors are used, a minimum air velocity of 50 feet per minute is necessary to assure that carbon monoxide gas produced by a fire will be carried by the air current to the downwind sensors in a timely manner. This minimum velocity has been required for over two decades in mines using carbon monoxide sensors for fire detection, and has been shown to provide effective early warning.

The final rule, like the proposal, allows mine operators to request lower velocities in the ventilation plan in areas where the minimum velocity cannot be maintained. Where the district manager approves such a plan, carbon monoxide sensor spacing would have to be reduced to no greater than 350 feet. NIOSH research and Agency experience show that the reduced spacing is necessary to assure carbon monoxide resulting from a fire more quickly reaches downwind sensors.

Commenters questioned where and how MSHA would make air velocity measurements under the proposal. Consistent with existing inspection procedures, MSHA uses representative cross-sectional areas when determining air velocities. Large areas (such as belt channels, boom holes, and fall areas) and restricted areas (such as overcasts) are not representative and would not be used to determine air velocities.

Another commenter supported the proposal but stated that the district manager should conduct an investigation, including a ventilation survey, prior to approving a lower velocity in the ventilation plan. Prior to approving changes in the ventilation plan, the district manager receives recommendations from inspectors, supervisors and specialists who are familiar with specific conditions in the mine. The district manager can also direct that further investigation or review be made at the mine which could include an underground ventilation survey. However, the Agency does not believe it is necessary to conduct an underground investigation in all cases and has not included such a requirement in the final rule.

Final § 75.350(b), like the proposal, revises the existing standard. It provides that the use of air from a belt air course to ventilate a working section be permitted only when evaluated and approved by the district manager in the ventilation plan. It requires the mine operator to provide justification in the plan that the use of air from the belt entry affords at least the same measure of protection as where belt haulage entries are not used to ventilate working places.

This final rule addresses Panel Recommendation 7, which states that MSHA should evaluate, as part of the approval of the mine ventilation plan, the safety of the use of air from the belt entry to ventilate working sections. The Panel further stated that the district manager must take special care to evaluate whether the air from the belt entry can be routed to the working face in a manner that is safe for all miners involved.

The final rule has been changed from the proposal to reduce to two months the time allowed for mine operators currently using air from the belt entry to submit a revised ventilation plan to the district manager. This change was made in response to commenters and to clarify MSHA's intent that mine operators submit their revised ventilation plans as soon as feasible after the final rule becomes effective. MSHA believes that the two-month period allows adequate time.

The Agency will approve ventilation plans and revisions that assure that the use of air from the belt entry to ventilate working sections affords at least the same measure of protection as where belt haulage entries are not used to ventilate working places. The district manager will notify the operator in writing of the approval or denial of approval of a proposed ventilation plan or proposed revision. The district manager will send a copy of this notification to the miners' representative. If the district manager denies approval of a proposed plan or revision, the district manager will notify the operator, in writing, of the deficiencies and the deadline for submitting the required information.

If the operator does not respond by the deadline, or if issues can not be resolved, the district manager will send a second letter notifying the operator: (1) That the plan has not been approved; (2) of the deadline for submitting any required information; and (3) that after that deadline, if the operator does not submit the required information, the plan will be revoked. If the operator does not submit the required information in response to the second letter, the district manager will send a letter notifying the operator that the plan is revoked.

Operating after the revocation date is a violation of the existing standard requiring an approved ventilation plan. A citation would be issued for failure to have an approved plan, as required by the existing ventilation standard.

During the rulemaking process and at the public hearings, MSHA solicited comments on this proposal. The Agency was particularly interested in comments related to circumstances in which the district manager does not approve the continued use of air from the belt entry to ventilate working sections.

A commenter stated that the use of air from the belt entry should not be

allowed. However, the commenter suggested that for consistency, the Assistant Secretary should review all plan revisions proposing the use of air from the belt entry. If the district manager makes the decision, the commenter recommended that MSHA develop criteria for plan approval that would hold mine operators to a higher standard. The commenter further stated that when the use of air from the belt entry is disapproved, its use should be discontinued immediately.

Other commenters supported the use of air from the belt entry to reduce methane levels, and stated that mines currently using that air to ventilate working sections should be allowed to continue. Some of these commenters also indicated that if the district manager decides to disapprove the use of air from the belt entry, a reasonable transition period should be allowed for the mine operator to make the necessary ventilation changes.

Mine ventilation plans are designed to reflect the specific conditions at each operation. The MSHA personnel most familiar with those mines—local mine inspectors, specialists and supervisors—possess the technical expertise and are in the best position to make recommendations concerning plan approvals. Consistent with the Panel's recommendation, MSHA believes that the district manager is the appropriate senior official to make plan approval determinations including whether air from the belt entry should be used to ventilate working sections. To facilitate consistency with respect to Agency policy, MSHA will develop criteria for district managers to use when granting approval for the use of belt air.

There are potential sources of fire in belt conveyor entries, and the use of air from the belt entry to ventilate working sections can result in contaminants from a fire being carried to the working section. However, the Agency recognizes that there may be compelling reasons to use air from the belt entry as an intake air source for the section. These reasons may include the need for additional ventilation to dilute methane, or the need for fewer entries to reduce ground control hazards.

The district manager may approve the use of air from the belt entry to ventilate the working section only in sections developed with three or more entries. Under existing standards, a petition for modification will be required for two-entry mine development to use air from the belt entry to ventilate the working section, and to operate the belt in the return air course. The final rule does not affect existing granted petitions for modification at two entry mines.

In the preamble to the proposal, the Agency indicated that when the district manager makes a determination that the use of air from the belt entry would no longer be permitted in the mine ventilation plan, continued use of that air would be permitted until completion of current mining. MSHA recognizes that a transition period may be necessary, and that some mines can implement the change more readily than others. In response to commenters, the district manager, as part of the plan approval process, will make a determination on the duration of this transition period based on the specific conditions at each mine.

Commenters also stated that the Agency should not allow the use of air from the belt entry to ventilate working sections until MSHA establishes standards, as part of the conveyor belt approval process, for smoke density and toxicity. The Agency recognizes that smoke density and toxicity can impact escape during a mine fire. To address these areas, MSHA issued a Request for Information to solicit input from the mining community and other interested parties (73 FR 35057). MSHA believes that the use of air from the belt entry to ventilate working sections can be made as safe as not using such air. As noted by the Panel, conditions such as high methane levels and deep ground cover can present serious safety concerns to miners. The use of air from the belt entry in these circumstances may result in a safer mine environment.

In 2006, a fatal fire occurred at the Aracoma Alma Mine No. 1 in West Virginia. Public comments made during this rulemaking implied that deficiencies in the ventilation methods and safety measures in place at Aracoma at the time of the fire were approved by MSHA in the ventilation plan.

However, the accident investigation revealed that the Aracoma mine was not ventilated as specified and required in the approved ventilation plan. In the accident report, MSHA identified 25 violations of safety standards as contributing to the accident. The Agency concluded that the two fatalities would have been prevented had the mine operator fully complied with MSHA standards.

Final § 75.350(b)(3), revises the existing standard. Paragraph (b)(3)(i), like the proposal, requires that the average concentration of respirable dust in the belt air course, when used as a section intake air course, must be maintained at or below 1.0 mg/m^3. Paragraph (b)(3)(ii), like the proposal, requires that where miners on the working section are on a reduced respirable coal mine dust standard that is below 1.0 mg/m^3, the average concentration of respirable dust in the belt entry must be at or below the lowest applicable respirable dust standard on that section. Paragraph (b)(3)(iii), like the proposal, requires that a permanent designated area (DA) for dust measurements must be established at a point no greater than 50 feet upwind from the section loading point in the belt entry when the belt air flows over the loading point or no greater than 50 feet upwind from the point where belt air is mixed with air from another intake air course near the loading point. The DA must be specified and approved in the ventilation plan.

Final § 75.350(b)(3) is consistent with Panel Recommendation 17. The Panel stated that respirable coal mine dust concentrations in the air coursed through a belt conveyor entry, and used to ventilate working sections, should be as low as feasible and must not exceed the existing standard of 1.0 mg/m^3. The Panel also stated that district managers should have the authority to require improvements in dust control in the belt entry if the dust concentration exceeds an 8-hour time-weighted average of 1.0 mg/m^3 or raises the concentration in that section above the exposure limit.

Reduced standards are frequently established on working sections due to presence of respirable quartz. The existing exposure limit for respirable coal mine dust is 2.0 mg/m^3 when quartz levels are five percent or less. This standard is reduced when respirable dust in the mine atmosphere contains more than five percent quartz. Reduced standards are computed by dividing the percent of quartz measured in the mine atmosphere into the number ten. For example, if the mine atmosphere contains 20 percent quartz, the reduced standard would be 0.5 mg/m^3 (10/20 = 0.5 mg/m^3). The purpose of a reduced standard is to limit miner exposure to respirable quartz.

The final rule, like the proposal, assures that the respirable coal mine dust exposure of miners on the working section would not be increased by the use of air from the belt entry. For example, if the standard for the continuous miner operator (the designated occupation) is 2.0 mg/m^3 and the reduced standard for the roof bolter on the same working section (a designated area) is 0.8 mg/m^3, the average concentration of respirable dust in the belt entry used to ventilate that working section must not exceed 0.8 mg/m^3. This is because 0.8 mg/m^3 is the lowest applicable respirable dust standard on the section.

If a mine operator is unable to effectively reduce the respirable dust

levels in the belt entry to meet this requirement, the district manager will have the authority to revoke the ventilation plan which allowed the use of air from the belt entry to ventilate the working section.

MSHA believes that technology is available to effectively lower respirable dust levels in the belt entry. Because a principal source of respirable dust is at belt transfer points, technologies such as improved water sprays may reduce dust concentrations. If a mine operator reduces the air velocity in the belt entry, this could result in less scouring and lower respirable dust concentrations. As the Panel indicated, the operator should implement improved engineering controls whenever possible, or use air from another intake air course.

During the rulemaking process and at each of the public hearings, the Agency solicited comments on the proposal. A commenter supported the proposal. Another commenter agreed with reducing dust concentrations, and stated that the dust concentration should be as low as feasible.

Another commenter requested that MSHA not include this proposal in the final rule because there is no scientific justification for reducing the intake content of air that does not contain quartz in excess of five percent. The commenter stated that there is no connection between the designated area in the belt area and areas on the working section where there would be a reduced standard.

Another commenter stated that the proposal was unnecessary because respirable dust samples must still be collected at the affected designated areas or designated occupations. This commenter stated that additional reduction of dust concentrations to less than 1.0 mg/m^3 should not be required unless sample results from the designated area or occupations indicate non-compliance with the existing standard.

The mine ventilation system must provide the necessary air quantity and velocity to dilute and disperse the airborne dust generated in the working section. This requires the intake air ventilating working sections to be sufficiently uncontaminated to maintain compliance with applicable dust standards. MSHA recognizes that permitting air from the belt entry to ventilate working sections increases the quantity of air at the working place. The Agency also recognizes that conveyor belt entries represent a constant and potentially significant dust generating source that can contribute to the respirable dust exposure of all miners on the working section. Consistent with the Panel's recommendation, the final rule is necessary to assure that air from the belt entry does not increase miners' exposure to respirable coal mine dust.

Final §§ 75.350(b)(7) and (b)(8), like the proposal, are new provisions. Final § 75.350(b)(7) requires that the air velocity in the belt entry must be at least 100 feet per minute where this air is used to ventilate working sections. It provides that when requested by the mine operator, the district manager may approve lower velocities in the ventilation plan based on specific mine conditions. Final § 75.350(b)(8) requires that the air velocity in the belt entry must not exceed 1,000 feet per minute. It provides that when requested by the mine operator, the district manager may approve higher velocities in the ventilation plan based on specific mine conditions.

These requirements address Panel Recommendation 13. The Panel recommended minimum and maximum air velocities in belt entries for mines using air from belt entries to ventilate working sections. The Panel recommended a minimum velocity of 100 feet per minute, and a maximum of 1,000 feet per minute in the belt entry, but acknowledged that there are situations where these velocities may be difficult to maintain. For this reason, the Panel recommended allowing the district manager to approve exceptions to the minimum and maximum velocities.

The Panel provided three reasons for requiring a minimum velocity of 100 feet per minute: Improve the response time for fire detection; reduce the possibility of methane layering; and mitigate underground fog formation. The Panel recommended limiting the maximum velocity to 1,000 feet per minute to address physical discomfort to workers when air from the belt entry is used to ventilate working sections. Also, according to the Panel, when air from the belt entry is used to ventilate working sections, increased velocity will result in a greater entrainment of dust particles, resulting in a need to limit the velocity.

The Panel noted that it may be difficult to achieve minimum air velocities in locations outby point-feed regulators, and where the air meets a partial obstruction like an airway constriction at an overcast or undercast. MSHA believes that additional areas where minimum air velocities may be hard to achieve include those areas where entry height is exceptionally high.

Consistent with the Panel's recommendation, the final rule provides that the district manager may approve exceptions to the minimum and maximum velocities in the mine ventilation plan based on specific mine conditions. These exceptions can be approved where reductions to sensor spacing or alert and alarm levels are made to assure the fire detection capabilities of the AMS are maintained. In developing their ventilation plans, mine operators should use the criteria in NIOSH research (RI 9380, 1991) to determine appropriate alert and alarm levels.

A commenter supported the proposal but suggested that exceptions to the minimum and maximum velocities be approved at MSHA headquarters. For the reasons outlined above, MSHA believes that the district manager is in the most appropriate position to make a judgment on this issue.

Another commenter objected to any limits on the velocity of air in the belt entry. That commenter stated that velocities greater than 1,000 feet per minute may be necessary in gassy mines. However, the commenter did recognize that the proposal allowed the district manager to approve higher velocities in specific situations.

Consistent with the Panel recommendation, MSHA believes establishing limits on velocity in the final rule, with the district manager being able to approve exceptions to the limits, is justified for mines using air from the belt entry to ventilate working sections.

Final § 75.350(d)(1), like the proposal, revises the existing standard. It requires that the air current that will pass through the point-feed regulator must be monitored for carbon monoxide or smoke at a point within 50 feet upwind of the point-feed regulator. It also requires that a second point must be monitored 1,000 feet upwind of the point-feed regulator, unless the mine operator requests a lesser distance to be approved by the district manager in the mine ventilation plan based on mine-specific conditions.

The final rule addresses Panel Recommendation 16. The Panel recommended that mines using air from the belt entry to ventilate working sections install, where possible, a second carbon monoxide sensor in the primary escapeway 1,000 feet upwind of the sensor required by the existing standard. MSHA believes that this final rule will expedite escape in the case of a fire or other emergency, since a fire in the primary escapeway may be detected before contaminants inundate the alternate escapeway. This early-warning will provide the AMS operator and responsible person with additional time

to assess potential hazards and determine necessary corrective actions.

MSHA is aware that point-feeding air from the primary escapeway to the belt entry designated as the alternate escapeway can present significant problems for miners who must evacuate the mine due to a fire in the primary escapeway. The second sensor would monitor the primary escapeway for fire. Agency experience suggests this is possible in most cases since point-feed regulators are typically near the mouth of development panels or deep into the mains of the mine. However, the final rule allows operators to request that a lesser distance be approved by the district manager in the mine ventilation plan based on mine-specific conditions, for example, near intake shafts where the distance from the point-feed regulator to the bottom of the shaft may be less than 1,000 feet.

A commenter suggested that similar protection should be required for locations where air is introduced from a shaft or slope into the belt air course (injection point). MSHA does not consider these locations to be point-feed regulators. This commenter's suggestion is beyond the scope of the Panel's recommendation and this rulemaking.

Other commenters stated a sensor installed 1,000 feet out by a point-feed regulator did not provide additional protection and was not necessary. In its report, the Panel recommended installation of this sensor to provide earlier warning of a fire in the intake, and to eliminate possible false alarms. MSHA agrees that these sensors can provide early detection of a fire in the intake, and enhance miner safety.

Proposed § 75.350(d)(7) is not included in the final rule. The proposal would have required that where point-feeding air from a primary escapeway to a belt entry designated as an alternate escapeway, point-feed regulators be equipped with a means to remotely close the regulator. It would have also required that the AMS operator, after consultation with the responsible person and section foreman, be capable of performing this function from the designated surface location. The final rule does not include a requirement for providing a means for closing or re-opening the regulator from the designated surface location.

The proposed rule addressed Panel Recommendation 16. The Panel recommended that, when carbon monoxide sensors detect alert or alarm levels of carbon monoxide and the mine has designated the belt entry as the alternate escapeway, the AMS operator should have the ability and authority to remotely close or open the point-feed regulator after consulting with the responsible person designated by the mine operator to take charge during mine emergencies.

Several commenters indicated that closure of a point-feed regulator would be a major ventilation change. The commenters noted that the change can reduce the intake air quantity on a working section and create hazardous conditions. These commenters were opposed to requiring a means to remotely close or re-open point-feed regulators due to the possibility of inadvertent closure, which could create explosive atmospheres in working places. A commenter stated that these types of air changes should be performed only by trained mine rescue personnel with MSHA approval, and only after the mine was evacuated.

MSHA agrees that closure of a regulator can reduce the intake air quantity on a working section, and may cause sudden and rapid increases in methane concentrations on the working sections. Closing regulators without properly notifying sections may lead to an ignition in the face area, fires and explosions.

After a review of the comments, the Agency has determined, based on its experience with making ventilation changes during emergencies that the existing requirement that point-feed regulators be provided with a means to close the regulator from the intake and belt air courses within the mine is the most appropriate method for making this ventilation change during a mine emergency. This allows an on-site evaluation of the circumstances surrounding the emergency, and prevents an inadvertent or unauthorized closure from the surface.

Section 75.351(b)—Designated Surface Location and AMS Operator

Final § 75.351(b)(2), like the proposal, revises the existing standard. It requires that the AMS operator must have as a primary duty the responsibility to monitor the malfunction, alert and alarm signals of the AMS, and to notify appropriate personnel of these signals. In response to comments and to clarify the Agency's intent, the final rule is changed from the proposal to include a requirement that, in the event of an emergency, the sole responsibility of the AMS operator shall be to respond to the emergency.

The final rule addresses Panel Recommendation 12. The Panel indicated that the highest priority of the AMS operator should be monitoring and responding to system signals. Under the final rule, the AMS operator is not prohibited from performing additional duties as long as the alert, alarm and malfunction signals can be seen or heard, and a timely response can be initiated. The final rule will assure that the AMS operator's other duties do not adversely affect the primary responsibility of responding to AMS signals.

Commenters supported this provision, but were concerned that AMS operators may have other duties not directly related to safety and health. These commenters also stated that AMS operators should not have other responsibilities during an emergency.

In response to these comments, the final rule adds a requirement clarifying that, in the event of an emergency, the sole responsibility of the AMS operator shall be to respond to the emergency. This will assure that an AMS operator is performing those duties essential to the safety and health of miners during an emergency.

Section 75.351(e)—Location of Sensors—Belt Air Course

Final § 75.351(e)(1), like the proposal, revises and renumbers existing § 75.351(e). Under final § 75.351(e)(1), the term ''approved'' has been added to clarify that all sensors used for fire detection must be approved under existing § 75.1103–2. In addition, the term ''smoke sensors'' has been deleted. The requirements for smoke sensors are addressed in final § 75.351(e)(2).

Final §§ 75.351(e)(1)(i) and (ii), like the proposal, renumber existing §§ 75.351(e)(1) and (2). Final § 75.351(e)(ii) makes nonsubstantive changes for clarity and ease of reading. No other changes have been made to these provisions.

Final § 75.351(e)(1)(iii), like the proposal, renumbers and revises existing § 75.351(e)(3). It requires approved sensors at intervals not to exceed 1,000-feet along each belt entry; however, in areas along each belt entry where air velocities are between 50 and 100 feet per minute, spacing of sensors must not exceed 500 feet. It also retains the existing requirement that in areas along each belt entry where air velocities are less than 50 feet per minute, the sensor spacing must not exceed 350 feet.

The requirement for a minimum velocity in the belt entry is based on the time it would take for carbon monoxide or smoke to travel from a fire to the sensors. When the air velocity is reduced, the time required to carry carbon monoxide gas or smoke to a sensor is increased. Therefore, the distance between sensors needs to be reduced to maintain the same level of early-warning fire detection.

The 500-foot spacing interval for velocities between 50 and 100 fpm, like the proposal, is a new requirement. MSHA calculated the spacing requirement, which provides a 10-minute maximum travel time for gases between sensors. The 500-foot spacing requirement with a velocity between 50 and 100 fpm is equivalent to the 1,000-foot sensor spacing with 100 fpm air velocity. The time for carbon monoxide gas or smoke to travel from a fire to a downwind sensor is no greater than 10 minutes.

A commenter supported the provision, but stated that the effectiveness of the reduced sensor spacing should be demonstrated in the mine. The Agency has extensive experience and data on the air flow characteristics in belt conveyor entries, including tracer gas tests and ventilation surveys. That experience and data show that reduced sensor spacing requirements are effective for detecting carbon monoxide produced by a fire. MSHA believes further testing at each mine site is not necessary.

Final § 75.351(e)(1)(iv), like the proposal, renumbers and revises existing § 75.351(e)(4). It requires approved sensors not to be more than 100 feet downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up. In addition, if the belt drive, tailpiece, and/or take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor downwind of the last component. Also, if the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up.

A commenter supported the proposal, and added that the sensors should also be visually examined during the preshift examination. Existing standards require these sensors to be visually examined at least once each shift because they are installed to comply with § 75.350(b). The examination can be made during either the preshift or on-shift examination.

Another commenter suggested the provision should apply only to mines using air from the belt entry to ventilate the working section. While the final rule applies only to mines using air from the belt entry, the same requirement is included in final § 75.1103–4(a)(1)(i) and applies to all mines using belt haulage. Belt drives, tail pieces, transfer points and take-up units are potential fire sources. The additional sensors will assure earlier detection of a fire.

Final § 75.351(e)(1)(v), like the proposal, renumbers existing § 75.351(e)(5). No other changes have been made.

Final § 75.351(e)(2), like the proposal, is a new provision. It requires smoke sensors to be installed to monitor the belt entry under final § 75.350(b). The final rule addresses Panel Recommendation 9 that MSHA require the use of smoke sensors in addition to carbon monoxide sensors in mines using air from a belt entry to ventilate working sections at three specific locations.

When smoke sensors become available, mine operators must comply with the requirements for installing both smoke and carbon monoxide sensors in those mines that use air from the belt entry to ventilate the working section.

Final § 75.351(e)(2)(i), like the proposal, requires a smoke sensor to be installed at or near the working section belt tailpiece in the air stream ventilating the belt entry. In addition, in longwall mining systems, the sensor must be located upwind in the belt entry at a distance no greater than 150 feet from the mixing point where intake air is mixed with the belt air at or near the tailpiece.

A smoke sensor at or near the section tailpiece will warn miners of smoke prior to it contaminating the working section. This allows more time for miners to evacuate the section with less exposure to potentially toxic fumes.

Final § 75.351(e)(2)(ii), like the proposal, requires a smoke sensor to be installed not more than 100 feet downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up. In addition, if the belt drive, tailpiece, and take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor located downwind of the last component. Also, if the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up. These components are potential fire sources. The additional sensors will assure earlier detection of a fire.

Based upon the Panel's report and Agency experience and data, MSHA believes that smoke sensors provide additional protection at the belt drive, which can be a major source of frictional heating from belt slippage. This can often produce significant smoke with little carbon monoxide, and can result in a belt fire.

Final § 75.351(e)(2)(iii), like the proposal, requires smoke sensors to be installed at intervals not to exceed 3,000 feet along each belt entry. The Agency is not requiring a smoke sensor to be installed near the midpoint of the belt line as recommended by the Panel. The midpoint of the belt line will change as the section advances or retreats, which would require splicing of the data line when relocating the smoke sensor. The frequent splicing of the data lines could allow moisture and dust to enter the line and may result in communication failures. Miners have indicated that frequent splicing of the cable containing the AMS data line can adversely affect the reliability of a system.

MSHA believes the requirement for smoke sensors along the belt entry is responsive to the Panel's goal for more effective and reliable early detection of conveyor belt fires. The final rule would avoid problems associated with frequent relocation of the smoke sensor. The 3,000-foot spacing requirement provides longer belts to be monitored at additional locations.

Final § 75.351(e)(2)(iv), like the proposal, provides that the smoke sensor requirements of this final rule are effective one year after the Secretary has determined that a smoke sensor is available to reliably detect fire in underground coal mines. This final rule is consistent with the Panel's suggested delayed effective date for the smoke sensor requirement, to permit in-mine evaluation of the sensors. The Panel noted reliability and maintenance issues with the use of smoke sensors in underground coal mines, especially along conveyor belt entries.

NIOSH is currently testing smoke sensors used in other harsh industrial environments for their potential use in underground mines. NIOSH is evaluating these sensors to assess reliability and service life.

To allow for further in-mine evaluation and approval of smoke sensors, the Secretary's determination will be made after a nationally recognized testing laboratory formally lists a smoke sensor specifically tested for use in underground coal mines. In making the determination regarding the availability of smoke sensors, the Secretary will also consider whether additional rulemaking is appropriate. MSHA will notify mine operators of the availability of smoke sensors by publishing a notice in the **Federal Register**.

The final rule is based on the Secretary's authority under existing § 75.1103–2 to approve nationally recognized testing laboratories. The Secretary has approved two such laboratories for listing or approving components of automatic fire sensors.

They are Underwriters Laboratories (UL) and Factory Mutual (FM). These laboratories establish standards for manufacturers of components of automatic fire sensors used in underground coal mines.

MSHA has recommended a change to a commercial standard for smoke detectors to be applied to address sensor reliability in underground coal mines. In December 2002, the Agency asked UL to add a category for smoke sensors for underground coal mines to their commercial performance standard for smoke sensors (UL268). In MSHA's request to UL, the Agency asked that the performance standard for smoke sensors include tests for sensitivity to smoldering and flaming coal. UL has formed a new working group, which includes an MSHA representative, to study false alarms caused by coal mine dust and other airborne particulates.

MSHA's Program Policy Manual (Manual) provides additional guidance on the requirements of § 75.1103–2. The Manual states that fire sensors used in belt entries must be listed or approved by UL or FM. New or unique devices to be used as fire sensors that are not yet listed by UL or FM and which may meet the requirements of these standards can be submitted to MSHA's Office of Technical Support for a determination of whether they are acceptable to use.

Once a laboratory has formally listed a smoke sensor for use in underground coal mines, the Secretary will evaluate the sensor to determine if it will reliably detect a fire in the underground environment. MSHA believes that, once the smoke sensors for underground coal mines are available, one year will allow mine operators using air from the belt entry to ventilate working sections sufficient time to purchase and install the sensors. The Agency intends to keep the mining community informed of ongoing activities with respect to the development of smoke sensors for underground coal mines.

Some commenters supported the proposal, but stated that smoke sensors are currently available. They added that upon approval, installation should be immediate and not be delayed by allowing one year for compliance. Other commenters stated that smoke detectors should not be required until they are reliable and commercially available.

NIOSH has not found smoke sensors to be reliable for fire detection in the mine environment. Research continues to identify technology that can be adapted to the mine environment, and MSHA intends to require smoke sensors when available. The Agency believes that one year is an appropriate time period for manufacturers to produce the sensors, and for mine operators to purchase and install them.

A commenter supported the locations of smoke sensors but wanted sensors to be placed at intervals not to exceed 1,500 feet and to have smoke sensors placed at every transfer point along each belt line. Consistent with the Panel recommendation, the Agency believes a 3,000-foot interval achieves the objective for placing a sensor near the midpoint of each belt flight. MSHA recognizes that once a smoke sensor has been approved for use in underground coal mines, adjustments to spacing requirements may be necessary based on in-mine testing.

Section 75.351(q)—Training

Final § 75.351(q)(1), like the proposal, revises existing § 75.351(q). It requires that all AMS operators must be trained annually in the proper operation of the AMS. It requires that training include the following subjects under final paragraphs (q)(1)(i) through (vii): Familiarity with underground mining systems; basic AMS requirements; the mine emergency evacuation and firefighting program of instruction; the mine ventilation system including planned air directions; appropriate responses to alert, alarm and malfunction signals; use of mine communication systems including emergency notification procedures; and AMS recordkeeping requirements.

The final rule is consistent with Panel Recommendation 12 which specifies the content of required annual training for AMS operators.

Under the final rule, training should address the specific conditions and practices at the mine where the AMS operator is employed. Based on Agency experience, MSHA believes an understanding of these subjects is essential to properly perform the duties of an AMS operator.

A commenter supported the specified content of the proposed training but stated that the training under the proposal should not be part of the annual Part 48 training. This commenter also stated that AMS operators should receive training on system maintenance and calibration in order to better judge when the system may need maintenance.

The training required in the final rule is separate from annual refresher training in Part 48. AMS operators will receive training on those aspects of maintenance and calibration that are directly related to alert, alarm, and malfunction signals.

Final § 75.351(q)(2), like the proposal, is new and requires that, at least once every six months, all AMS operators must travel to all working sections. The Panel stated that some AMS operators do not travel underground, and recommended that they be required to spend at least a day underground on a semi-annual basis.

Several commenters objected to the proposal, stating that some AMS operators are disabled and may not be able to travel underground safely. In support of their objection, they stated that some of these AMS operators are miners with substantial underground experience and, under the proposal, would be precluded from operating the AMS. Another commenter stated that accommodations can be made for disabled AMS operators to travel underground.

Other commenters supported the proposal because they recognize the value of the AMS operator being familiar with underground workings. In their view, this familiarity gives AMS operators a greater sense of what needs to be done during an emergency. These commenters also stated that a greater frequency than every six months may be needed.

Consistent with the Panel recommendation, MSHA believes it is important for AMS operators to travel underground to retain familiarity with underground mining systems including haulage, ventilation, communication, and escapeways. MSHA appreciates commenters' concerns for disabled miners, but the Agency believes that accommodations can be made to allow disabled AMS operators to meet this requirement. MSHA also believes that the six-month frequency recommended by the Panel is appropriate to provide AMS operators with current information on the underground operation.

Final § 75.351(q)(3) is changed from the proposal to be consistent with the existing requirement to keep training records for one year. It requires a record of the content training, the person conducting the training, and the date the training was conducted to be maintained at the mine for at least one year by the mine operator. The final rule allows MSHA to verify the training in the previous year has been conducted.

Several commenters objected to the proposed requirement to maintain the training records for two years, stating that it was inconsistent with other existing record retention requirements. One commenter supported the proposal. For consistency, the final rule includes a one year record retention period.

Section 75.352—Actions in Response to AMS Malfunction, Alert, or Alarm Signals

Final § 75.352(f), like the proposal, makes a conforming reference and organizational changes to the existing standard. It deletes the term ''50-foot per minute'' and replaces the reference to § 75.351(e)(3) with § 75.350(b)(7).

Final § 75.352(g), like the proposal, is new. It requires that the AMS automatically provide both a visual and audible signal in the belt entry at the point-feed regulator location, at affected sections, and at the designated surface location when carbon monoxide concentrations reach (1) the alert level at both point-feed intake monitoring sensors, or (2) the alarm level at either point-feed intake monitoring sensor.

The final rule addresses Panel Recommendation 16 that when both of the sensors installed in the primary escapeway monitoring the point feed reach the carbon monoxide alert level, or if one sensor reaches the alarm level, a warning signal be given at the regulator location. The Panel's recommendation addresses point-feed regulators where air is introduced to a belt entry and used to ventilate the working section. The Panel specifically limited this recommendation to point-feed regulators feeding the belt entries designated as alternate escapeways.

The final rule provides that visual and audible signals be automatically activated at all three locations when concentrations of carbon monoxide at both of the sensors in the intake escapeway reach the alert level or when one sensor reaches the alarm level.

The signal at the regulator would provide notice to miners nearby that a fire may have occurred in the primary escapeway. This information will assist miners in evacuating the mine.

The Panel did not specify in which escapeway the signal is to be located. The final rule specifies that the signal be located in the belt entry (alternate escapeway). Since the purpose of the signal is to warn of a potential fire in the primary escapeway, MSHA believes that it is more appropriate to locate the signal on the belt side of the regulator.

A commenter stated that since the signal is in an area that is normally unmanned, it would not be useful. That commenter further stated that if a signal is required, it should only alarm when the point feed regulator has been closed, and the signal should only be required if the belt entry is designated as the alternate escapeway.

Consistent with the Panel recommendation, the signal is required only where the belt entry is designated as the alternate escapeway. This would include any entries designated as the escapeway common with the belt. This signal must be given when sensors monitoring the primary escapeway indicate a potential fire. The signal, which is in addition to the signals provided to affected sections, will provide miners in the area with early notification that there is a potential fire in the primary intake, and that the alternate escapeway could become contaminated. The signal would allow those miners to take early and appropriate action.

Section 75.371—Mine Ventilation Plan; Contents

Final § 75.371(jj), like the proposal, revises the existing standard. It requires that the mine ventilation plan contain the locations and approved velocities at those locations where air velocities in the belt entry are above or below the limits set forth in final § 75.350(a)(2) or final §§ 75.350(b)(7) and 75.350(b)(8).

The final rule addresses Panel Recommendation 13 regarding the approval of air velocities in the belt entry. Although the Panel recommended minimum and maximum velocities in the belt entry, they recognized that in certain areas of underground coal mines it may be difficult to achieve these velocities. The Panel specifically noted that this may occur in the outby air split near a point-feed regulator, or where the air meets a partial obstruction like an airway constriction at an overcast or undercast. Where the recommended velocities cannot be achieved, the Panel recommended that the district manager may approve exceptions in the mine ventilation plan, dependent upon specific mine conditions.

MSHA believes that requiring approval in the mine ventilation plan will allow the district manager to fully evaluate the conditions in the mine including all aspects of the mine ventilation system. In making a determination on whether to approve requested velocities, the district manager would evaluate the need for increasing fire detection sensitivity by adjusting alert and alarm levels for high velocities or reducing sensor spacing for low velocities.

Final § 75.371(mm), like the proposal, revises the existing standard. It requires that the mine ventilation plan contain the location of any diesel-discriminating sensor, and additional carbon monoxide or smoke sensors installed in the belt air course.

The final rule addresses Recommendation 10 that MSHA perform regular, periodic reviews of the AMS records at mines using air from a belt entry to ventilate working sections to evaluate the number of occurrences of false alarms due to diesel exhaust. In those instances where such false alarms are excessive, the Panel recommended MSHA should require the use of diesel-discriminating sensors.

Based on Agency experience and data, diesel exhaust contains carbon monoxide, and can activate alerts and alarms. Under these circumstances, these signals may not be the result of a fire, but the result of diesel equipment operating in the area. An excessive number of these alert and alarm signals can cause miners to become complacent and routinely ignore them as false alarms. The benefit of diesel-discriminating sensors is that the frequency of signals caused by diesel engines is reduced.

The final rule provides that the district manager may require the use of diesel-discriminating sensors in the approved mine ventilation plan. It requires that the operator include in the ventilation plan the locations of any diesel-discriminating sensors. The district manager decision to require the use of these sensors will be based on mine conditions where diesel-powered equipment is used and excessive alert and alarm signals are caused by diesel exhaust. Since the final rule is applicable to all mines using belt haulage, the reference to existing § 75.351(e)(5), that relates to mines using air from the belt entry to ventilate the working section, is deleted.

MSHA conducts periodic reviews of AMS records during regular inspections of the mine. MSHA re-emphasized procedures for inspecting an AMS in a recently revised Agency handbook, which specifically provides inspectors with guidance on evaluating the frequency of diesel-related alert and alarm signals (Carbon Monoxide and Atmospheric Monitoring Systems Inspection Procedures MSHA Handbook PH–08–V–2, February, 2008).

Final § 75.371(nn), like the proposal, revises the existing standard. It requires that the mine ventilation plan contain the length of the time delay or any other method used to reduce the number of non-fire related alert and alarm signals from carbon monoxide sensors.

This final rule addresses Panel Recommendation 8 on discontinuing the use of point-type heat sensors, and replacing them with carbon monoxide sensors for early fire detection in all mines using belt haulage. Existing § 75.351(m) requires that the use and length of any time delays be approved by the district manager in the mine ventilation plan for mines using air from the belt entry to ventilate the working

section. Time delays may also be necessary in some mines that do not use air from the belt entry to ventilate working sections to aid in the reduction of false alarms. Like the proposal, final § 75.1103–4 requires the use of carbon monoxide sensors. Therefore, time delays for these mines must also be approved in the mine ventilation plan. Accordingly, the final rule deletes the reference to existing § 75.351(m) because this final rule applies to all mines using belt haulage.

Proposed § 75.371(yy) would have required that the mine ventilation plan contain the locations where airlock doors are installed between air courses. Several commenters suggested that including the locations in the ventilation plan is unnecessary since those locations are already required on the mine ventilation map. Commenters also stated that no approval to install an airlock should be required in the ventilation plan. MSHA concurs that the mine ventilation map is the appropriate place to identify airlock locations. Therefore, proposed § 75.371(yy) is not included in the final rule.

Proposed § 75.371(zz) is renumbered to § 75.371(yy). It requires that the mine ventilation plan contain the locations where the pressure differential cannot be maintained from the primary escapeway to the belt entry.

The final rule addresses Panel Recommendation 14 that primary escapeways be ventilated with intake air preferably, and to the extent possible, the primary escapeway should have a higher pressure than the belt entry. The final rule allows the district manager to evaluate specific mine conditions and require additional actions or precautions to be taken to protect the integrity of the primary escapeway, as appropriate.

A commenter suggested that requiring approval in the ventilation plan of locations where pressure differentials cannot be maintained would require frequent and unnecessary changes. MSHA believes these areas must be identified in the plan to allow an evaluation of the methods used to limit air leakage into the primary escapeway. The Agency expects that in areas where the pressure differentials cannot be maintained from the primary escapeway to the belt, mine operators will provide additional protection to maintain the integrity of the primary escapeway. These protections would include enhanced stopping construction and design, or changes to the ventilation system.

Sections 75.380—Escapeways; Bituminous and Lignite Mines, and 75.381—Escapeways; Anthracite Mines

Final §§ 75.380(d)(7)(v) and 75.381(c)(5)(v), like the proposal, revise the existing standards. They require that each lifeline be equipped with one directional indicator cone securely attached to the lifeline, signifying the route of escape, placed at intervals not exceeding 100 feet. In addition, cones must be installed so that the tapered section points inby. The final rule adds the phrase ''securely attached to the lifeline'' to clarify the Agency's intent under the proposal.

Final §§ 75.380(d)(7)(vi) and 75.381(c)(5)(vi), are renumbered and changed from proposed §§ 75.380(d)(7)(vii) and 75.381(c)(5)(vii). They require each lifeline to be equipped with one sphere (such as a tennis ball) securely attached to the lifeline at each intersection where personnel doors are installed in adjacent crosscuts.

Final §§ 75.380(d)(7)(vii) and 75.381(c)(5)(vii), are new. The final rule responds to comments by simplifying the proposal. The final rule requires that each lifeline be equipped with two securely attached cones, installed in succession with the tapered section pointing inby, to signify an attached branch line is immediately ahead.

Final §§ 75.380(d)(7)(vii)(A) and 75.381(c)(5)(vii)(A) are renumbered and changed from proposed §§ 75.380(d)(7)(vi) and 75.381(c)(5)(vi). They require a branch line leading from the lifeline to an SCSR cache to be marked with four cones with the base sections in contact to form two diamond shapes. The cones must be placed within reach of the lifeline.

Final §§ 75.380(d)(7)(vii)(B) and 75.381(c)(5)(vii)(B) are renumbered and changed from proposed §§ 75.380(d)(7)(ix) and 75.381(c)(5)(ix). They require a branch line leading from the lifeline to a refuge alternative to be marked with a rigid spiraled coil at least eight inches in length. The spiraled coil must be placed within reach of the lifeline.

Proposed §§ 75.380(d)(7)(viii) and 75.381(c)(5)(viii), which required each lifeline be marked to provide tactile feedback distinguishable from other markings to indicate the location of physical impediments in the escapeways, are not included in the final rule.

The final rules address Panel Recommendation 15. The Panel made recommendations on tactile signals attached to lifelines and signal standardization.

Several commenters supported the proposed standardization of tactile signals, but believed the proposed rule created a system of cones that was too complicated. These commenters wanted a simpler system that would be easier to remember during a mine emergency. Several of these commenters also stressed the need for adequate training for miners.

Another commenter believed standardization was not necessary, and that mines should be permitted to continue to use signals they have developed, which have been used for an extended period of time. This commenter believed changing the tactile signals may create confusion. This commenter also stated the proposal would require replacing miles of lifeline in their mine and retraining hundreds of miners for little benefit.

During the rulemaking process and at the beginning of each public hearing, the Agency specifically solicited comments on alternate tactile signal markings. The Agency received no specific comments suggesting alternatives to its proposal.

In response to comments, the final rule requires a simpler system of tactile signals. The Agency continues to believe that a standardized system will reduce the possibility of confusion in an emergency, and will provide an additional safety benefit to miners who transfer to different mines, because they would not have to become familiar with new signal systems.

The final rule requires only three signals to be attached to the lifeline. These are for direction of travel, location of personnel doors, and to alert miners that a branch line is ahead that would lead to either an SCSR storage cache or a refuge alternative. Additional signals are required on the branch lines to identify whether it leads to an SCSR storage cache or a refuge alternative. Illustration 1 shows how these signals should be installed.

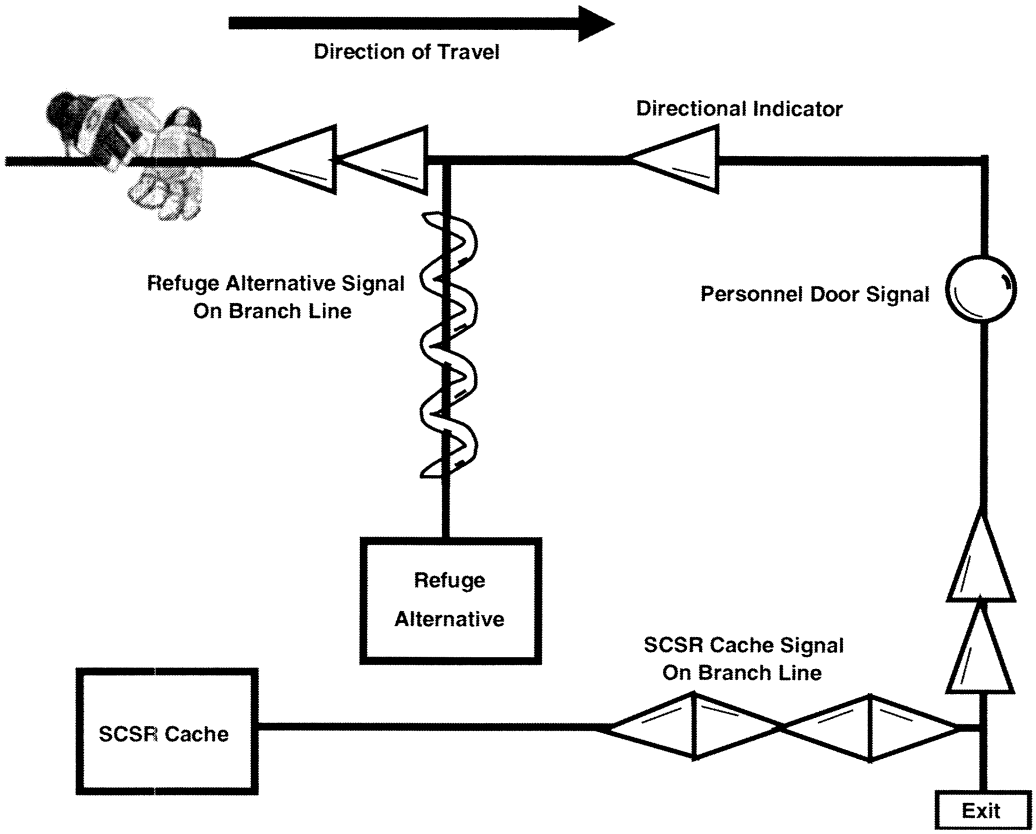


Illustration 1

The final rule does not include a tactile signal to indicate the location of physical impediments in the escapeway. By not including this signal, the Agency has simplified the signals on the lifeline. The Agency believes that the locations of physical impediments can be addressed during evacuation training.

In another rulemaking, MSHA is establishing new requirements for refuge alternatives in underground coal mines. Because tactile signals on lifelines are addressed in this final rule, to provide a comprehensive and integrated approach for these requirements, the Agency is including the requirement for tactile signals leading to refuge alternatives in this rulemaking. In the proposal, the Agency would have required a two-foot rigid coil as a tactile signal for refuge alternatives. The proposed requirement has been changed to a rigid spiraled coil at least eight inches in length.

These signals, when integrated with the comprehensive escape and evacuation plan, including escapeway drills and expectation training, will help miners understand the differences in, and significance of, tactile signals and aid in evacuating the mine.

Existing §§ 75.380(d)(7) and 75.381(c)(5) require escapeways to be provided with lifelines or an equivalent device. The new requirements for tactile signals are applicable to any device used to comply with these sections.

Final §§ 75.380(f) and 75.381(e), like the proposal, revise the existing standards on the primary escapeway. They provide that one escapeway, ventilated with intake air, shall be designated as the primary escapeway. The final rules require that the primary escapeway shall have a higher ventilation pressure than the belt entry unless the mine operator submits an alternative in the mine ventilation plan to protect the integrity of the primary escapeway, based on mine specific conditions, which must be approved by the district manager.

The final rules address Panel Recommendation 14. The Panel recommended that primary escapeways should be designed, constructed, and maintained in accordance with the provisions of existing §§ 75.333(b) through (d) to minimize the air leakage. The Panel also recommended that primary escapeways be ventilated with intake air and, to the extent possible, the primary escapeway should have a higher pressure than the belt entry. Based on Agency experience, MSHA recognizes the need to maintain the pressure differential from the primary escapeway to the belt air course. A higher pressure in the primary escapeway would assure that air leakage would move from the escapeway to the belt entry. In case of a fire in the belt entry, the primary escapeway would not become contaminated. Under the final rule, an operator may submit an alternative in the mine ventilation plan, based on mine specific conditions, to protect the integrity of the primary escapeway. The alternative must be approved by the district manager.

There are two components to air leakage. First, the flow from one entry to the other is caused by the pressure differential. Air will tend to flow from high to low pressure. The other component is the resistance to flow. A high resistance will not allow high air flow rates even when the pressure differentials are considerable. A key to limiting air leakage through a ventilation control is to increase the resistance by sealing the control and its perimeter. Historically, MSHA has identified damaged and improperly installed doors as sources of high air leakage. Openings in stoppings to provide routing of air and water lines, electrical conductors and other conduits must also be sealed to minimize air leakage. When these conduits are

removed, ventilation controls must be properly repaired.

The Agency does not support the use of check curtains or other temporary ventilation controls such as parachute stoppings to increase the resistance in the primary escapeway in order to pressurize the air course during normal mining. The use of such controls on a regular basis diminishes the efficiency of the ventilation system.

Commenters stated that mine operators should be required to maintain the pressure differential from the primary escapeway to the belt entry at all times, and that alternatives should not be approved in the mine ventilation plan, but only in petitions for modification. A commenter also stated the pressure in the primary escapeway should at all times be at least 50 percent higher than that in the belt entry.

Other commenters indicated that maintaining the pressure differential as proposed may not be feasible in all areas of the mine.

Consistent with the Panel recommendation, MSHA believes that to the extent possible, the primary escapeway should have a higher pressure than the belt entry. The Agency's action in the final rule reflects the Agency's opinion that it is not possible to maintain the primary escapeway at a pressure 50 percent higher than the belt entry in all areas of the mine, as suggested by commenters. This is especially so on development sections where pressures equalize near the section loading point. Due to unique conditions in mines, the district manager is the appropriate official to make determinations regarding alternatives to maintaining the pressure differential based upon a review of the mine operator's proposed revision to the mine ventilation plan.

Subpart L—Fire Protection

Section 75.1103–4—Automatic Fire Sensor and Warning Device Systems; Installation; Minimum Requirements

Final § 75.1103–4, like the proposal, requires the use of carbon monoxide sensors for fire detection along belt conveyors in all underground coal mines. In addition, the final rule includes installation, maintenance, operating and training requirements related to the use of carbon monoxide sensors.

Final § 75.1103–4(a), like the proposal, requires that on December 31, 2009 automatic fire sensor and warning device systems that use carbon monoxide sensors shall provide identification of fire along all belt conveyors.

The final rule eliminates the existing requirement to identify the belt flight on which the system detects fire. When point-type heat sensors are used for fire detection, they are designed to identify the belt flight on which the fire occurs. Carbon monoxide sensors provide a more precise identification of the location, to within 1,000 feet.

The final rule supersedes granted petitions for modification that allowed mine operators to use carbon monoxide sensors equivalent to point-type heat sensors. Mines operating under these petitions must comply with the requirements in the final rule. Mines that have installed carbon monoxide sensors in lieu of point-type heat sensors must comply with the final rule.

Commenters supported the proposal. A commenter stated that carbon monoxide sensors provide for a safer method of detecting fires than point-type heat sensors.

Final § 75.1103–4(a)(1), like the proposal, requires carbon monoxide sensors to be installed at specific locations along belt conveyors. These locations maximize the potential of early warning of a fire in the belt entry, and are based on Agency experience with the use of carbon monoxide sensors in underground coal mines.

Final § 75.1103–4(a)(1)(i), like the proposal, requires a sensor to be placed not more than 100 feet downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up. If the belt drive, tailpiece, and/or take-up are installed together in the same air course, they may be monitored with one sensor located not more than 100 feet downwind of the last component. However, if the distance between the belt drive unit, tailpiece transfer point, and belt take-up units exceeds 100 feet, additional sensors are required to monitor each of these belt conveyor components.

A commenter supported the proposal. Other commenters objected to the proposal, stating that additional sensors would be unnecessary, require additional maintenance, and could be the source of false alarms. Another commenter stated that one sensor should be allowed to monitor a belt transfer consisting of a drive, take-up, and a tailpiece if all are in the same ventilation stream.

A commenter was concerned that installation of the sensor at an existing belt drive could expose miners to risks when working at heights. To avoid these risks, the commenter stated that these sensors should not be installed at existing belt drives but only at belt drives installed in the future.

As stated in the proposal, this requirement is intended to provide early fire detection at the belt drive where there are multiple belt components, which are potential fire sources, and the distance between these components exceeds 100 feet. The final rule allows one sensor to monitor the drive, take-up, and tailpiece if the distance is less than 100 feet. When sensors need to be installed in high places, the mine operator can use mechanisms that allow sensors to be temporarily lowered to a location where they can be safely accessed for maintenance purposes.

Final § 75.1103–4(a)(1)(ii), like the proposal, requires a sensor to be installed in the belt entry not more than 100 feet downwind of each section loading point. This sensor monitors the section loading point, and provides miners on the section with warning of fire in the belt entry. A commenter supported the proposal.

Final § 75.1103–4(a)(1)(iii), like the proposal, requires that sensors be located along the belt entry so that the spacing between sensors does not exceed 1,000 feet. Where air velocities are less than 50 feet per minute, spacing must not exceed 350 feet.

The 350-foot spacing requirement has been shown in NIOSH research to provide effective early warning of a fire in the belt entry when the air velocity is 50 feet per minute or less. The combination of sensor spacing and air velocity is required to assure that carbon monoxide produced by a belt fire is transported to the sensor to provide for an effective warning.

A commenter stated that the spacing requirement should be modified so that sensors are placed every 500 feet to allow the location of a fire to be detected with greater accuracy. Another commenter stated that 2,000 feet spacing of sensors is effective.

Another commenter stated that 500 feet would be more appropriate spacing for carbon monoxide sensors where the velocity along the belt is less than 50 feet per minute.

NIOSH research on sensor spacing has shown that 1,000 feet is the appropriate distance for air velocities of least 50 fpm. Additional NIOSH research has demonstrated that reduced sensor spacing of 350 feet is necessary when air velocities are less than 50 fpm to maintain early fire detection capabilities.

As discussed earlier, MSHA uses representative cross-sectional areas when determining air velocities. MSHA would not use large areas (such as belt channels, boom holes, and fall areas) and restricted areas (such as overcasts) to determine air velocities.

Proposed § 75.1103–4(a)(1)(iv) has not been included in the final rule. It would have required sensors to be located upwind, a distance of no greater than 50 feet from the point where the belt air course is combined with another air course or splits into multiple air courses.

A commenter stated that the sensor required under the proposal is unnecessary because it provides little additional information and should be addressed in the ventilation plan if needed. MSHA concurs that this sensor is not necessary. The Agency expects the location of the sensors required in the final rule will provide precise information on the location of a fire in the belt entry.

Final § 75.1103–4(a)(1)(iv) is new, clarifies MSHA's intent under the proposal, and requires that the location and identification of all carbon monoxide sensors be included on the mine maps required under existing §§ 75.1200 and 75.1505. MSHA has included this clarification in response to a comment that the location of sensors be on a mine map that is available to miners. This is consistent with the existing standard related to identifying the location of stored SCSRs.

Final § 75.1103–4(a)(2), like the proposal, requires that where used, sensors responding to radiation, smoke, gases, or other indications of fire, shall be spaced at regular intervals to provide protection equivalent to carbon monoxide sensors, and installed within the time specified in this final rule.

The final rule removes the reference to point-type heat sensors and replaces it with carbon monoxide sensors. As stated earlier, point-type heat sensors cannot be used for fire detection along belt conveyors.

A commenter supported this proposal and stated that point-type heat sensors should only be used to activate fire suppression systems.

Final § 75.1103–4(a)(3), like the proposal, requires that when the distance from the tailpiece at loading points to the first outby sensor reaches the spacing requirements in § 75.1103–4(a)(1)(iii), an additional sensor shall be installed and put in operation within 24 production shift hours. When sensors of the kind described in paragraph (a)(2) of this section are used, they shall be installed and put in operation within 24 production shift hours after the equivalent distance that has been established for the sensor from the tailpiece at loading points to the first outby sensor is first reached.

The final rule removes the 125-foot spacing requirement for point-type heat sensors and replaces it with conforming requirements for carbon monoxide sensor spacing. Because point-type heat sensors are no longer permitted, spacing for the devices is no longer applicable. Carbon monoxide sensors must be added when the distance from the section loading point to the first outby sensor reaches 1,000 feet when air velocity is at least 50 feet per minute, and 350 feet if the velocity is less than 50 feet per minute. A commenter supported the proposal.

Final § 75.1103–4(b), like the proposal, requires that sensors be installed to minimize the possibility of damage from roof falls and the moving belt and its load. The sensors must be installed near the center in the upper third of the entry, in a manner that does not expose personnel working on the fire detection system to unsafe conditions. The final rule requires that sensors not be located in abnormally high areas or in other locations where air flow patterns do not permit products of combustion to be carried to the sensors.

MSHA based this requirement on the results of NIOSH research and Agency experience with carbon monoxide sensors. Data has shown that during both smoldering and open combustion fires, the products of combustion stratify, leaving higher concentrations of smoke and carbon monoxide near the mine roof. Based on this, NIOSH recommended installing sensors near the roof of the entry to take advantage of stratification. MSHA's experience is that when operators do not properly install sensors, fire detection can be hindered or delayed. For example, sensors that are installed behind equipment or other obstructions may not be exposed to the products of combustion contained in the air stream, thereby impairing their ability to provide for effective fire detection.

The final rule requires sensors to be installed near the center, and in the upper third, of the belt entry. In most cases, the safest location for installing a sensor is from a roof bolt plate or belt hanger located beside the belt along the walkway. This prevents miners from being exposed to hazards such as a moving belt when calibrating or examining sensors. A commenter supported the proposal.

The final rules, and those in §§ 75.1103–5, 75.1103–6, and 75.1103–8 discussed below, address Panel Recommendation 8. The Panel recommended that MSHA initiate rulemaking to discontinue the use of point-type heat sensors for early-warning and detection of conveyor belt fires in all underground coal mines.

In making its recommendation, the Panel examined research comparing the fire detection capabilities of carbon monoxide sensors and point-type heat sensors. The Panel concluded that there are inherent inadequacies with point-type heat sensors for reliable early-warning belt fire detection. According to the Panel's report, carbon monoxide sensors can detect fires at an earlier stage of fire development than point-type heat sensors. The Panel found the time it took for point-type heat sensors to alarm during a fire was much longer than the time it took carbon monoxide sensors to alarm. The Panel also found that the location and spacing of point-type heat sensors relative to fire location could result in fires not being detected in a timely manner.

Research and accident investigation reports on fires have consistently shown that carbon monoxide sensors are superior to point-type heat sensors. MSHA's accident investigation report of the Dilworth mine fire (MSHA, 1992 Greene County, PA), revealed that carbon monoxide sensors were superior to point-type heat sensors, where both sensors were installed in the same belt entry. The ignition source of the fire was located nearly midway between two heat sensors spaced at 50 feet. The fire was detected by the carbon monoxide sensor located 1,400 feet downwind of the fire. The fire was extinguished by miners without injury and with only little damage in the belt entry. The heat sensors installed along the belt did not detect the fire.

Section 75.1103–5—Automatic Fire Warning Devices; Actions and Response.

Final § 75.1103–5, like the proposal, has been retitled. It adds requirements for initiating warning signals and responses for automating fire warning devices.

Final § 75.1103–5(a), like the proposal, requires that when the carbon monoxide level reaches 10 parts per million (ppm) above the established ambient level at any sensor location, an effective warning signal must be provided at specific locations.

Consistent with MSHA's existing standards for a warning signal to be effective, they must be located where they can be seen or heard. MSHA experience also shows that an action level at 10 parts per million above the ambient level provides an effective warning of a fire and allows miners the opportunity to safely evacuate the affected area.

The Agency solicited comments on the proposal. A commenter supported it. Another commenter stated that at mines

not using air from the belt entry to ventilate working sections, a warning level should be given at 10 ppm and an alarm at 15 ppm. The final rule is based on a NIOSH research recommendation that a carbon monoxide fire warning and withdrawal of miners be initiated at 10 ppm above the ambient level.

Final § 75.1103–5(a)(1), like the proposal, requires effective warning signals to be provided to working sections and other work locations where miners may be endangered from a fire in the belt entry.

Locations where miners may be endangered would include working sections, areas where mechanized mining equipment is being installed or removed, permanent work locations, and other locations specified in the Mine Emergency Evacuation and Firefighting Program of Instruction required under existing § 75.1502. A commenter supported the proposal.

Final § 75.1103–5(a)(2), like the proposal, requires that the warning signal be provided at a manned surface location where personnel have an assigned post of duty.

MSHA believes that providing the warning at a manned surface location will facilitate timely and effective evacuation of miners and improve communication with mine management. This will also facilitate more effective decision-making in a mine emergency and allow for required communication with local emergency response personnel, appropriate state agencies, and MSHA. This is consistent with the Emergency Response Plan requirement in Section 2 of the MINER Act for local communication.

Commenters requested clarification on the term ''assigned post of duty''. Another commenter supported the proposal. The term ''assigned post of duty'' is not new and was in a requirement for mines using point-type heat sensors. It refers to the location where miners are regularly assigned to work and are able to see or hear the warning signal.

Final § 75.1103–5(a)(2)(i), like the proposal, retains the existing requirement for having a telephone or equivalent communication with all miners who may be endangered.

A commenter stated that the final rule should also recognize a PED (personal emergency device) as an equivalent communication. A PED is not equivalent to a telephone because it does not provide two way communications, which is essential during a mine emergency.

Final § 75.1103–5(a)(2)(ii), like the proposal, is new. It requires a mine map or schematic that shows the location of sensors and the intended air flow direction at these locations to be posted at the manned surface location. This map or schematic must be updated within 24 hours of any change in information.

The final rule is necessary to assure that the location of a potential fire can be identified in a timely manner. With the use of carbon monoxide sensors, a fire location is identified by specific sensors. The sensor locations are most easily identifiable by using a map or schematic. The air directions are needed to facilitate fire fighting activities and evacuation in the event of a fire, explosion or other emergency.

A commenter stated that this information should also be on the mine bulletin board so that it is available to miners. The final rule has been changed to specify that the location of all carbon monoxide sensors be included on the mine maps required under §§ 75.1200 and 75.1505. These maps are available to miners.

Final § 75.1103–5(a)(3), like the proposal, is derived from the existing standard, and has not been changed, except for the numbering.

Final §§ 75.1103–5(d) through (h), like the proposal, are new provisions which specify responses required to signals from the automatic fire warning devices. They are consistent with requirements for responses to AMS signals in existing § 75.352 and apply to all mines using belt haulage.

Final §§ 75.1103–5(d), like the proposal, requires that when a malfunction or warning signal is received at the surface location, the sensor must be identified and appropriate personnel be immediately notified. Depending upon the circumstances at the mine, appropriate personnel may include the mine foreman, mine electrician, or other persons responsible for maintaining the sensors.

Final § 75.1103–5(e), like the proposal, requires that upon notification of a malfunction or warning signal, appropriate personnel must immediately initiate an investigation to determine the cause of the malfunction or warning signal and take the required action set forth in § 75.1103–5(f). The final rule requires immediate corrective actions to assure that the appropriate responses are taken in case of an emergency.

Commenters requested clarification on the term immediately as used in the proposal because the responses required may take longer than 15 minutes to accomplish. Another commenter supported the proposal.

The term immediately in the final rule means that the required actions must be promptly initiated after a malfunction or warning signal is received. The amount of time it takes to resolve the issue depends on the occurrence. MSHA does not intend that the use of the term immediate in the final rule be defined by the 15-minute immediate accident notification requirement in existing § 50.10.

Final § 75.1103–5(f), like the proposal, requires specific procedures to be followed if any sensor indicates a warning, unless the mine operator determines that the signal does not present a hazard to miners.

For example, if the operator knows that the warning signal is caused by cutting and welding or calibration of a sensor, actions would not have to be taken. MSHA believes that actions in response to carbon monoxide malfunction or warning signals are needed to assure that the protective early-warning capabilities of the carbon monoxide sensor result in timely action and rapid evacuation in case of emergency.

Final § 75.1103–5(f)(1), like the proposal, requires appropriate personnel to notify miners in affected working sections, in affected areas where mechanized mining equipment is being installed or removed, and at other locations specified in the existing approved mine emergency evacuation and firefighting program of instruction when a warning signal is received.

Commenters questioned the need for appropriate personnel to notify miners in addition to providing the automatic signal. Another commenter supported the proposal.

It is necessary for appropriate personnel to notify miners, in addition to the automatic signal, to assure that miners receive the warning and withdrawal is initiated. Notification under this final standard facilitates two-way communication among those involved and those responsible for addressing the emergency, and thus enhances successful decision-making.

Final § 75.1103–5(f)(2), like the proposal, requires all miners in the affected areas to be immediately withdrawn to a safe location identified in the mine emergency evacuation and firefighting program of instruction upon notification of a warning signal. Under the final rule, miners who are assigned emergency response duties do not have to be withdrawn.

Commenters stated that immediate withdrawal of all miners in affected areas upon notification of a warning signal without investigation would be a problem when there are false alarms.

Another commenter supported the proposal.

Once a warning signal is received, there is a significant likelihood that a fire has occurred and, in the confined area of an underground mine, miners must be immediately withdrawn. Waiting for the results of an investigation could put miners at risk of being trapped by the fire. If false alarms are occurring, the mine operator should take action to reduce those alarms, such as installing diesel-discriminating or hydrogen-insensitive sensors, or programming time delays.

Final § 75.1103–5(g), like the proposal, requires that, if the warning signal will be activated during calibration of sensors, personnel manning the surface location must be notified prior to and upon completion of calibration. The final rule is changed to require that the notification be provided to affected working sections and other areas where miners may be endangered.

This requirement is necessary so that miners know that a warning signal is not a fire. This will apply only at mines where calibration of sensors would cause activation of warning signals; many sensors have a calibration mode, where warning signals are blocked during calibration.

A commenter stated that the proposal could be read to require that notice be provided to each miner before calibration of sensors can begin. Another commenter supported the proposal.

Under the proposal, MSHA did not intend that the mine operator directly notify each miner on the section before calibration of sensors can begin. The mine operator must assure that appropriate personnel on the section are notified, who will then be responsible for informing other miners of warning signals caused by calibration.

Final § 75.1103–5(h), like the proposal, requires that if any fire detection component becomes inoperative, immediate action must be taken to repair the component. While repairs are being made, the belt may continue to operate if the requirements in final §§ 75.1103–5(h)(1) through (h)(6) are met.

Final § 75.1103–5(h)(1), like the proposal, requires that when only one sensor is inoperative, continued operation of the belt is permitted when a trained person is stationed at the sensor and monitors the air for carbon monoxide using a hand-held detector.

Final § 75.1103–5(h)(2), like the proposal, requires that when two or more adjacent sensors are inoperative, continued operation of the belt is permitted if the area monitored by these sensors is patrolled so the area is traveled each hour in its entirety. Alternatively, a trained person must be stationed at each inoperative sensor to monitor for carbon monoxide.

Final § 75.1103–5(h)(3), like the proposal, requires that if the complete fire detection system becomes inoperative continued operation of the belt is permitted if the area monitored by these sensors is patrolled so the area is traveled each hour in its entirety.

Final § 75.1103–5(h)(4), like the proposal, requires the trained persons who conduct monitoring under the final rule to have two-way voice communication capability at intervals not to exceed 2,000 feet. The final rule requires that persons conducting monitoring must report carbon monoxide levels to the surface at intervals not to exceed one hour.

Final § 75.1103–5(h)(5), like the proposal, requires that trained persons who conduct monitoring under the final rule to immediately report to the surface any concentration of carbon monoxide that reaches 10 parts per million above the established ambient level, unless the mine operator knows that the source of the carbon monoxide does not present a hazard to miners.

Final § 75.1103–5(h)(6), like the proposal, requires that handheld detectors used to monitor the belt entry under the final rule have a detection level equivalent to that of the carbon monoxide sensors.

These requirements assure that repairs are made in a timely manner so that the fire detection system will remain capable of warning miners of a fire in the belt entry. Otherwise, the belt must be taken out of service until necessary repairs are made. A commenter supported the proposal.

Section 75.1103–6—Automatic Fire Sensors; Actuation of Fire Suppression Systems

Final § 75.1103–6, like the proposal, specifies that point-type heat sensors or automatic fire sensor and warning device systems may be used to activate fire suppression systems.

Although the Panel recommended discontinuing the use of point-type heat sensors for fire detection, it recognized a benefit in allowing them to be used for activating fire suppression systems. Consistent with the Panel's recommendation, point-type heat sensors may continue to be used to actuate deluge-type water systems, foam generator systems, multipurpose dry-powder systems, or other equivalent automatic fire suppression systems. A commenter supported the proposal.

Section 75.1103–8—Automatic Fire Sensor and Warning Device Systems; Examination and Test Requirements

Final § 75.1103–8(a), like the proposal, requires that automatic fire sensor and warning device systems be examined at least once each shift when belts are operated as part of a production shift, and a functional test of the warning signals be made at least once every seven days. The final rule does not include the term inspection that was in the proposal to clarify that examination and maintenance of the system must be made by a qualified person.

Increased frequency of examinations and functional tests of the system better assures that the system will effectively maintain its fire warning capability so that it can provide adequate warning to miners in the event of a fire. The increased examinations will also alert the mine operator to any damaged or missing sensors and alarm units.

Under the final rule, the functional test must be completed at intervals not to exceed 7 days. MSHA expects the functional test to verify that warning signals are effective at all locations where these signals are provided. Consistent with existing practice, MSHA expects that functional tests will include application of carbon monoxide gas to the sensors necessary to activate each warning signal. These functional tests are needed to assure that the system retains its fire warning capability so that it will provide the proper warning signal in case of emergency.

The Agency believes that the examination requirements can be integrated into required preshift and on-shift examinations under existing §§ 75.360 and 75.362. The examinations should identify any problems with sensors such as improper installation, damaged or missing sensors, cables and alarm units.

A commenter objected to the weekly testing requirement in the proposal. Other commenters stated that presently carbon monoxide sensors are tested and calibrated monthly and that increasing the frequency of testing will increase maintenance costs and reduce the life of carbon monoxide sensors. These commenters also requested clarification on whether the functional testing could be performed monthly.

Commenters also requested that the Agency clarify the terms inspection and examination, which are used interchangeably in the proposal. These commenters also requested clarification on whether a functional test must be performed on each sensor every seven days and whether gas must be applied

as part of the testing procedure. They stated that weekly testing would be burdensome for large mines and that monthly functional testing and calibration would be sufficient.

Another commenter supported the proposal, stating that it provided the upkeep needed for the carbon monoxide sensors to maintain their accuracy.

Under the final rule, the weekly functional test does not require carbon monoxide to be applied to every sensor. The purpose of the test is to determine if the alarm units are working properly. Carbon monoxide only needs to be applied to a sufficient number of sensors to activate every alarm. For example, to satisfy this requirement, carbon monoxide could be applied to only one sensor on each section to activate the alarm. Alternatively, a single sensor could be installed on the surface or underground that is programmed to activate all alarms in the mine.

The functional test must be conducted at least once every seven days. The seven-day frequency is consistent with the Agency's existing testing procedures for carbon monoxide sensors for all mines using these sensors in lieu of point-type heat sensors. The functional tests are currently being performed, either as part of an approved mine ventilation plan or a granted petition for modification.

Final § 75.1103–8(b), like the proposal, requires that the mine operator maintain a record of the functional tests and keep the records for a period of one year.

Maintaining records for one year is consistent with other recordkeeping requirements, and would indicate to MSHA how warning signals operate over the course of a year. Like the proposal, the final rule deletes the existing requirement that a record card of the weekly inspection of point-type heat sensors be kept at each belt drive since the final rule requires carbon monoxide sensors.

Commenters requested that the final rule specify where the records of functional tests are to be located and maintained. Under the final rule, mine operators can determine how and where records would be maintained so long as they are kept for a period of one year.

Final § 75.1103–8(c), like the proposal, requires that carbon monoxide sensors be calibrated according to manufacturer's instructions at intervals not to exceed 31 days. In addition, the final rule requires a record of sensor calibrations to be kept for a period of one year.

MSHA experience and data have shown this interval to be an appropriate time period to assure that carbon monoxide sensors respond effectively and reliably in the event of a fire. The record will provide the mine operator with information to make necessary repairs and maintain the system, and will allow MSHA to verify that these corrective actions were taken in a timely manner. Comments supported the proposal.

The final rule also makes conforming changes to existing § 75.1103–10. The final rule removes the reference to belt that is not fire resistant and to the maximum distance between point-type heat sensors. No substantive changes were made to the existing standard.

Subpart R—Miscellaneous

Section 75.1731—Maintenance of Belt Conveyors and Belt Conveyor Entries

Final § 75.1731(a) modifies the proposal, and requires that damaged rollers, or other damaged belt conveyor components, which pose a fire hazard must be immediately repaired or replaced. Under the final rule, all other damaged rollers, or other damaged belt conveyor components, must be repaired or replaced.

Final § 75.1731(b), like the proposal, requires that conveyor belts be properly aligned to prevent the moving belt from rubbing against the support structure or components.

Final § 75.1731(c) modifies the proposal, and prohibits materials in the belt conveyor entry where the material may contribute to a frictional heating hazard.

Final § 75.1731(d), like the proposal, requires that splicing of any approved conveyor belt must maintain flame-resistant properties of the belt.

These requirements address Panel Recommendations 1, 5, 6 and 14 regarding belt entry and conveyor belt maintenance. They apply to all underground coal mines using belt haulage.

In its report, the Panel recommended that MSHA rigorously enforce existing standards on underground conveyor belt maintenance and fire protection, and improve inspection procedures. The Panel also stated that MSHA should focus on required examinations of the belt lines by mine examiners to assure each belt is kept in good working order. The Panel identified the following areas for increased attention by belt examiners: belts rubbing stands; damaged rollers; inadequate rock dusting; and accumulations of materials.

In its report, the Panel cited the findings of MSHA's investigation into the Aracoma Alma Mine No. 1 belt fire as evidence of inadequate belt maintenance (MSHA Fatal Accident Report, Aracoma, Logan County, WV, 2007). MSHA identified deficiencies in belt maintenance and examinations as root causes of the fire.

MSHA believes prevention of belt fires is a critical element in improving miners' safety, and proper maintenance and examinations will reduce the likelihood of fires. Improper belt examinations can lead to uncorrected hazards. This can result in frictional heating of combustibles in the belt entry, which could cause a fire. These requirements will assure that mine operators will implement proper mine examination and maintenance procedures and that belt examiners will identify and correct hazardous conditions in the conveyor belt entry to improve safety of miners.

Existing § 75.400 addresses accumulation of combustible materials, but it does not address materials in the belt entry that may contribute to a frictional heating hazard. These materials may include rock, trash, discarded conveyor belt parts, posts, and cribs. These materials may become potential frictional ignition sources and result in a belt fire. MSHA does not intend that these materials include rock dust used in the belt entry.

It is essential that any splices in the belt maintain the fire resistant properties of the belt so that the belt will continue to perform as intended in the approval and it will not easily ignite or be a source of fuel for a fire. MSHA recognizes the need to address splicing of the belt so that the materials and processes used in splicing do not compromise the flame resistant properties of the belt. Because splicing is a belt maintenance issue, it is included in this final rule.

A commenter stated that damaged rollers and other malfunctioning belt components can result in the frictional heating of combustibles. This commenter also stated that damaged rollers can be identified during the preshift examination and repaired or replaced at the beginning of the next shift.

Commenters requested clarification of the proposed terms damaged, malfunctioning, and immediately. Commenters also objected to the proposed term immediately because the proposal did not connect the requirement for immediate replacement of the damaged belt roller or malfunctioning component with a hazardous condition. A commenter also noted that immediate replacement of damaged belt rollers or malfunctioning components is not always feasible or practical, and that it may be more

appropriate for replacement to occur on a maintenance shift. These commenters also stated that existing regulations adequately address this concern.

In response to comments, the final rule does not include the reference to malfunctioning belt conveyor components, and clarifies that immediate repair or replacement is only required when damaged rollers, or other damaged belt conveyor components, pose a fire hazard. All other damaged rollers, or other damaged belt conveyor components, must be repaired.

A commenter stated that where the accumulation of noncombustible materials does not create an immediate fire hazard, miners should correct the condition on the next shift.

Another commenter stated that the proposal was unnecessary and vague. Commenters wanted the terms noncombustible and accumulation clarified, and the final rule to address frictional heating or ignition. These commenters wanted clarification of whether the accumulation of waste rock, rock dust, gob materials, or other noncombustible materials would be prohibited. Commenters also wanted to know whether an accumulation of noncombustible materials in a crosscut would be prohibited. Other commenters stated that existing regulations adequately address the proposal.

After reviewing all comments, the final rule is changed from the proposal to require that materials not be allowed in the belt conveyor entry if the material may contribute to a frictional heating hazard. Under the final rule, materials may be stored in crosscuts or other locations if they do not contribute to a hazard.

Existing § 75.1725(a) contains inspection and maintenance requirements applicable to mobile and stationary machinery and equipment, including conveyor belts. Based on its experience, MSHA does not believe that this standard or other existing standards appropriately address the Panel's concerns regarding potential hazards resulting from inadequate examinations by belt examiners and inadequate maintenance. These hazards are caused by misalignment of the belt, damaged rollers and other belt components, and materials that may contribute to a frictional heating hazard.

Several commenters asked how MSHA would determine that splices maintain the flame-resistant properties of the belt. During the rulemaking process, and at the public hearings, MSHA specifically raised the issue of how the Agency should determine flame resistance and indicated that the Agency was considering implementing a program to evaluate splice kits.

In response to these comments, MSHA will, at the request of approval holders or mine operators, make a suitability evaluation to determine if a splice kit maintains flame-resistant properties of the belt. This approach will be similar to the evaluations MSHA makes for stoppings and sealants. MSHA will place a list of suitable splice kits on the Agency's Web site and provide the list to interested stakeholders. Under the final rule, splice kits which have been evaluated by MSHA must be used when splicing Part 14 belts after December 31, 2009.

IV. Regulatory Economic Analysis

A. Executive Order 12866

Executive Order (E.O.) 12866 requires that regulatory agencies assess both the costs and benefits of regulations. To comply with E.O. 12866, MSHA has prepared a Regulatory Economic Analysis (REA) for the final rule. The REA contains supporting data and explanation for the summary economic materials presented in this preamble, including data on the mining industry, costs and benefits, feasibility, small business impacts, and paperwork. The REA is located on MSHA's Web site at *http://www.msha.gov/REGSINFO.HTM*. A copy of the REA can be obtained from MSHA's Office of Standards, Regulations and Variances at the address in the **ADDRESSES** section of the preamble.

Under E.O. 12866, a significant regulatory action is one meeting any of a number of specified conditions, including the following: Having an annual effect on the economy of $100 million or more, creating a serious inconsistency or interfering with an action of another agency, materially altering the budgetary impact of entitlements or the rights of entitlement recipients, or raising novel legal or policy issues. Based on the REA, MSHA has determined that the final rule will not have an annual effect of $100 million or more on the economy and that, therefore, it is not an economically significant regulatory action. MSHA has concluded that the final rule is otherwise significant because it raises novel legal or policy issues.

B. Population at Risk

The final rule will apply to all underground coal mines in the United States. As of 2007, MSHA data reveal that there were 624 underground coal mines, employing 42,207 miners, operating in the United States.

C. Benefits

MSHA has evaluated the safety benefits of the final rule on improved flame-resistant conveyor belts, fire prevention and detection, and approval of the use of air from the belt entry to ventilate the working sections in underground coal mines. The final rule will implement Section 11 of the MINER Act and the recommendations of the Technical Study Panel (Panel) on the Utilization of Belt Air and The Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining.

The final rule on improved flame-resistant conveyor belts will reduce belt entry fires in underground coal mines and will prevent related fatalities and injuries. From 1980 to 2007, there were 65 reportable belt entry fires. Almost all involved the conveyor belt itself. These fires caused over two dozen injuries and three deaths—one in 1986 at the Florence No. 1 Mine, and two in 2006 at the Aracoma Alma No. 1 Mine. The Technical Study Panel noted that the number of belt fires had decreased over the past decade, but that the rate (*i.e.*, number of fires per thousand mines) has remained constant. The Panel also noted that during this same period, although underground coal production increased so that the number of belt fires per 100 million tons decreased, there was high variability from year to year. The final rule will prevent conveyor belt fires and, in turn, reduce accidents, injuries, and deaths caused by conveyor belt fires.

The final rule on fire prevention and detection and approval of the use of air from the belt entry in underground coal mines will improve miner safety. The requirements addressing maintenance of the belt conveyor and belt conveyor entry will improve safety of miners by requiring related hazards to be corrected. These hazards, known to be sources of belt fire ignitions, include damaged and missing rollers and belt misalignment. For example, the MSHA Investigation Report of the Aracoma Alma Mine No.1 fire determined that the fire occurred as a result of the frictional heating due to a misaligned belt. The final rule will also require that damaged components be repaired or replaced and that materials contributing to a frictional heating hazard not be allowed in the belt entry.

The requirement to replace point-type heat sensors with carbon monoxide sensors for fire detection along belt conveyors in all underground coal mines will enhance miner safety because carbon monoxide sensors provide earlier fire detection. Earlier fire

detection allows miners to better address the problem and/or evacuate the area. MSHA's research and accident investigation reports indicate that carbon monoxide sensors are superior to point-type heat sensors. For example, in the 1992 Dilworth Mine fire, the point-type heat sensors were no more than 27 feet away, but the carbon monoxide sensor that actually detected the fire was 1,400 feet downwind of the fire. Based on MSHA's research and experience, replacing point-type heat sensors with carbon monoxide sensors is an improvement in early fire warning detection.

Inadequate Atmospheric Monitoring System (AMS) operator training was identified as a contributing factor in the two fatalities in the Aracoma fire. Accident investigators found all miners assigned the duties of an AMS operator at this mine needed additional training to properly respond to alert, alarm, and malfunction signals generated by the AMS. The requirement for AMS operator training will improve safety for miners by assuring that AMS operators will have the knowledge to respond properly to AMS signals. The training of miners as AMS operators will assure that MSHA has oversight in the development and approval of the task training, and annual retraining requirements will assure that AMS operators retain knowledge and training needed to perform specific duties and responsibilities. These training requirements will also assure that AMS operators are familiar with underground mining systems such as coal haulage, transportation, ventilation, and escape facilities.

The requirement for a higher ventilating pressure in the primary escapeway than the belt entry will assure that air leakage moves from this escapeway to the belt entry. If a fire were to occur in the belt entry, the primary escapeway will not become contaminated with smoke and carbon monoxide, thus maintaining the integrity of the escapeway and providing a safe means of egress for miners.

The requirement for lifelines to be marked with standardized tactile signals will aid miners evacuating the mine where visibility is obscured by smoke. New standardized signals will be required to: Identify the location of personnel doors in adjacent crosscuts connected to adjacent escapeways; and identify the location of refuge alternatives. Existing signals for direction of travel and SCSR storage locations will also be standardized. Standardization will allow for uniform understanding of the signals so that miners who transfer between mines will not need to learn new signal systems, and will reduce the possibility of confusion, delay, or injury during an emergency.

D. Compliance Costs [1]

MSHA estimated the first year costs and the yearly costs of the final rule. MSHA estimated costs to mine operators for the following requirements: Improved flame-resistant conveyor belt; installation and maintenance of carbon monoxide sensors in all underground coal mines; improved maintenance of conveyor belts and conveyor belt entries; AMS operator duties; standardized lifeline signals; installation of airlocks along escapeways; maintaining higher pressure in the escapeway than the belt entry; and an additional sensor and alarm unit on point-feed regulators in mines using air from the belt entry.

MSHA estimates total first year costs will be approximately $65 million, including approximately $44 million for the improved flame-resistant belts, and approximately $21 million for the remaining requirements.

MSHA estimates that the final rule will result in total yearly costs of approximately $52 million, including approximately $100,000 in yearly costs to manufacturers of conveyor belts. Yearly costs will be approximately $5 million for mine operators with fewer than 20 employees, approximately $21,000 per mine for the 223 mines in this size category. Yearly costs will be approximately $43 million for mine operators with 20–500 employees, approximately $110,000 per mine for the 391 mines in this size category. Yearly costs will be approximately $4 million for mine operators with more than 500 employees, approximately $410,000 per mine for the 10 mines in this size category.

The $52 million in yearly costs consist of approximately: $40.4 million for improved flame-resistant conveyor belt; $6.3 million for installation and maintenance of carbon monoxide sensors in all underground coal mines; $3.5 million for improved maintenance of conveyor belts and conveyor belt entries; $1 million for AMS operator duties; $150,000 for standardized lifeline signals; and $73,000 for other provisions mentioned above.

MSHA estimates the yearly cost for smoke sensors to be approximately $460,000; however, this amount is based on the cost of existing smoke sensors and may not reflect their actual cost when approved for underground mine use. Therefore, this cost is not included in the yearly costs of the final rule.

Table 1 is a summary of the approximate yearly costs of the final rule by mine size and requirement.

TABLE 1

Final provisions	1–19 employees	20–500 employees	501+ employees	Total
Improved Flame Resistant Belt	$3.3 million	$33.4 million	$3.8 million	$40.4 million.
Improved Flame Resistant Belt (Manufacturers)	n/a	n/a	n/a	$100,000.
CO Sensors	$660,000	$5.5 million	$180,000	$6.3 million.
Maintenance of belts and belt entries	$750,000	$2.6 million	$130,000	$3.5 million.
AMS Operator duties	$57,000	$960,000	$29,000	$1 million.
Lifeline signals	$16,000	$130,000	$7,300	$150,000.
Other provisions	$1,500	$64,000	$7,800	$73,000.
Total	$5 million	$43 million	$4 million	$52 million.

[1] All costs have been rounded; therefore, some total costs may deviate slightly from the sum of individual costs.

V. Feasibility

MSHA has concluded that the requirements of the final rule will be both technologically and economically feasible.

A. Technological Feasibility

The final rule does not involve activities on the frontiers of scientific knowledge. Aside from final § 75.351(e)(2), compliance with the provisions of the final rule is technologically feasible because the materials, equipment, and methods for implementing these requirements currently exist.

Final section 75.351(e)(2) will require mines that use air from the belt entry to ventilate working sections to install smoke sensors one year after approval for use in underground coal mines. At the current time, smoke sensors are not technologically feasible because these sensors are not reliable for use in underground coal mining. MSHA will notify the public when smoke sensors are approved for use in underground coal mining and become available.

B. Economic Feasibility

The yearly compliance cost of the final rule will be approximately $51.5 million for underground coal mines, which is 0.37 percent of annual revenue of $14.0 billion for all underground coal mines. MSHA concludes that the final rule will be economically feasible for these mines because the total yearly compliance cost is below one percent of the estimated annual revenue for all underground coal mines.

VI. Regulatory Flexibility Act and Small Business Regulatory Enforcement Fairness Act

Under the Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), MSHA has analyzed the impact of the final rule on small entities. Based on that analysis, MSHA has notified the Chief Counsel for Advocacy, Small Business Administration (SBA), and made the certification under the RFA at 5 U.S.C. 605(b) that the final rule will not have a significant economic impact on a substantial number of small entities. The factual basis for this certification is in the REA and summarized below.

A. Definition of a Small Mine

Under the RFA, in analyzing the impact of the final rule on small entities, MSHA must use the SBA definition for a small entity, or after consultation with the SBA Office of Advocacy, establish an alternative definition for the mining industry by publishing that definition in the **Federal Register** for notice and comment. MSHA has not established an alternative definition and is required to use the SBA definition. The SBA defines a small entity in the mining industry as an establishment with 500 or fewer employees.

MSHA has also examined the impact of the final rule on underground coal mines with fewer than 20 employees, which MSHA has traditionally referred to as ''small mines.'' These small mines differ from larger mines not only in the number of employees, but also in economies of scale in material produced, in the type and amount of production equipment, and in supply inventory. Therefore, the cost of complying with MSHA's final rule and the impact of the final rule on small mines will also be different.

This analysis complies with the legal requirements of the RFA for an analysis of the impact on ''small entities'' while continuing MSHA's traditional concern for ''small mines.''

B. Factual Basis for Certification

MSHA initially evaluates the impact on small entities by comparing the estimated compliance cost of a rule for small entities in the sector affected by the rule to the estimated revenue of the affected sector. When the estimated compliance cost is less than one percent of the estimated revenue, the Agency believes it is generally appropriate to conclude that the rule will not have a significant economic impact on a substantial number of small entities. When the estimated compliance cost exceeds one percent of revenue, MSHA investigates whether further analysis is required.

Total underground coal production in 2007 was approximately 278 million tons for mines with 500 or fewer employees. Using the 2007 price of underground coal of $40.29 per ton, MSHA estimates that underground coal revenue was approximately $11.2 billion for mines with 500 or fewer employees. The yearly cost of the final rule for mines with 500 or fewer employees is estimated to be approximately $47.4 million, or approximately $77,000 per mine. This is equal to approximately 0.42 percent of annual revenue. Since the yearly cost of the final rule is less than one percent of annual revenues for small underground coal mines, as defined by SBA, MSHA has certified that the final rule will not have a significant impact on a substantial number of small mining entities, as defined by SBA.

Total underground coal production in 2007 was approximately 7.7 million tons for mines with fewer than 20 employees. Using the 2007 price of underground coal of $40.29 per ton, MSHA estimates that underground coal revenue was approximately $310 million for mines with fewer than 20 employees. The yearly cost of the final rule for mines with fewer than 20 employees is estimated to be $4.7 million, or approximately $22,000 per mine. This is equal to approximately 1.53 percent of annual revenue.

The Agency has provided, in the REA accompanying the final rule, a complete analysis of the cost impact on this category of mines. MSHA estimates that some mines might experience costs somewhat higher than the average per mine in its size category while others might experience lower costs. Even though the analysis reflects a range of impacts for different mine sizes, from 0.42 to 1.53 percent of annual revenue, as noted above, MSHA has certified that the final rule will not have a significant impact on a substantial number of small mining entities, as defined by SBA.

VII. Paperwork Reduction Act

A. Summary

The information collection package for the final rule has been assigned OMB Control Number 1219–0145. The final rule contains information collection requirements (ICR) that will affect requirements in existing paperwork packages with OMB Control Numbers 1219–0009, 1219–0054, 1219–0066, 1219–0073, and 1219–0088. The requirement for AMS operator training will modify ICR 1219–0009. The requirements for fire protection will modify ICR 1219–0054. The requirements that affect the information collected for approval of flame-resistant conveyor belts will modify ICR 1219–0066. The requirements to amend the mine map will modify ICR 1219–0073. The requirements that affect the information contained in the ventilation plan for underground coal mines will modify ICR 1219–0088.

In the first year that the final rule is in effect, mine operators will incur 3,344 burden hours with related costs of approximately $240,000. Annually, starting in the second year that the final rule is in effect, mine operators will incur 2,350 burden hours with related costs of approximately $180,000. In addition, conveyor belt manufacturers will incur 540 burden hours and related costs of $27,000 in the first year that the final rule is in effect; 270 burden hours and related costs of $13,500 in the second year that the final rule is in effect; and 170 burden hours and related

costs of $8,500 in the third year that the final rule is in effect.

Final § 14.7, which requires approval holders to retain initial sales records of conveyor belts, is considered by MSHA to be an information collection requirement that does not result in a paperwork burden because it is considered a part of normal business practices.

For a summary of the burden hours and related costs by final provision, see the REA accompanying the final rule. The REA is posted on MSHA's Web site at *http://www.msha.gov/REGSINFO.HTM.* A copy of the REA can be obtained from MSHA's Office of Standards, Regulations, and Variances at the address provided in the **ADDRESSES** section of this preamble.

B. Procedural Details

The information collection package, OMB Control Number 1219–0145, has been submitted to OMB for review under 44 U.S.C. 3504, paragraph (h) of the Paperwork Reduction Act of 1995, as amended. A copy of the information collection package can be obtained from the Department of Labor by electronic mail request to *king.darrin@dol.gov* or by phone request to 202–693–4129.

Paperwork requirements contained in proposed §§ 14.4(b) and 75.350(b) received comments. A commenter stated that the actual formulation data required to be submitted to MSHA under proposed § 14.4(b) is more extensive than currently required and is not needed since approval is based solely on the BELT results. Another commenter stated that proposed § 14.4(b)(4) was confusing. Other commenters also were concerned with proposed provision § 75.350(b) that set out additional requirements to be included in the mine ventilation plan. These comments are addressed in earlier sections of this preamble and in the information collection package supporting this final rule (OMB control number 1219–0145).

VIII. Other Regulatory Considerations

A. The Unfunded Mandates Reform Act of 1995

MSHA has reviewed the final rule under the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1501 *et seq.*). MSHA has determined that the final rule will not include any Federal mandate that may result in increased expenditures by State, local, or tribal governments; and it will not increase private sector expenditures by more than $100 million in any one year or significantly or uniquely affect small governments. Accordingly, the Unfunded Mandates Reform Act of 1995 requires no further agency action or analysis.

B. Treasury and General Government Appropriations Act of 1999: Assessment of Federal Regulations and Policies on Families

The final rule will have no effect on family well-being or stability, marital commitment, parental rights or authority, or income or poverty of families and children. Accordingly, § 654 of the Treasury and General Government Appropriations Act of 1999 (5 U.S.C. 601 note) requires no further agency action, analysis, or assessment.

C. Executive Order 12630: Government Actions and Interference With Constitutionally Protected Property Rights

The final rule will not implement a policy with takings implications. Accordingly, Executive Order 12630 requires no further agency action or analysis.

D. Executive Order 12988: Civil Justice Reform

The final rule was written to provide a clear legal standard for affected conduct and was carefully reviewed to eliminate drafting errors and ambiguities, so as to minimize litigation and undue burden on the Federal court system. Accordingly, the final rule meets the applicable standards provided in § 3 of Executive Order 12988.

E. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The final rule will have no adverse impact on children. Accordingly, Executive Order 13045 requires no further agency action or analysis.

F. Executive Order 13132: Federalism

The final rule will not have ''federalism implications'' because it will not ''have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Accordingly, Executive Order 13132 requires no further agency action or analysis.

G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

The final rule will not have ''tribal implications'' because it will not ''have substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes.'' Accordingly, Executive Order 13175 requires no further agency action or analysis.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

The final rule has been reviewed for its impact on the supply, distribution, and use of energy because it applies to the coal mining industry. Because the final rule will result in yearly costs of approximately $51.5 million to the underground coal mining industry, relative to annual revenues of $14.0 billion in 2007, the final rule is not a ''significant energy action'' because it is not ''likely to have a significant adverse effect on the supply, distribution, or use of energy * * * (including a shortfall in supply, price increases, and increased use of foreign supplies).'' Accordingly, Executive Order 13211 requires no further Agency action or analysis.

I. Executive Order 13272: Proper Consideration of Small Entities in Agency Rulemaking

MSHA has reviewed the final rule to assess and take appropriate account of its potential impact on small businesses, small governmental jurisdictions, and small organizations. MSHA has determined and certified that the final rule will not have a significant economic impact on a substantial number of small entities.

IX. Final Rule

List of Subjects

30 CFR Part 6

Testing and evaluation by independent laboratories and non-MSHA product safety standards, Mine safety and health.

30 CFR Part 14

Approval of equipment, Mine safety and health, Underground mining.

30 CFR Part 18

Electric motor-driven mine equipment and accessories, Mine safety and health.

30 CFR Part 48

Training and retraining of miners, Mine safety and health.

30 CFR Part 75

Mandatory safety standards—Underground coal mines, Mine safety and health, Recordkeeping.

Dated: November 18, 2008.

Richard E. Stickler,

Acting Assistant Secretary for Mine Safety and Health.

■ For the reasons set out in the preamble, and under the authority of the Federal Mine Safety and Health Act of 1977 as amended by the Mine Improvement and New Emergency Response Act of 2006, MSHA is amending chapter I of title 30 of the Code of Federal Regulations as follows:

PART 6—TESTING AND EVALUATION BY INDEPENDENT LABORATORIES AND NON-MSHA PRODUCT SAFETY STANDARDS

■ 1. The authority citation for part 6 continues to read as follows:

Authority: 30 U.S.C. 957.

■ 2. Amend § 6.2 by revising the definition of ''Equivalent non-MSHA product safety standards'' to read as follows:

§ 6.2 Definitions.

* * * * *

Equivalent non-MSHA product safety standards. A non-MSHA product safety standard, or group of standards, determined by MSHA to provide at least the same degree of protection as the applicable MSHA product approval requirements in parts 14, 18, 19, 20, 22, 23, 27, 33, 35, and 36, or which in modified form provide at least the same degree of protection.

* * * * *

■ 3. Amend § 6.20 to revise paragraph (a)(1) to read as follows:

§ 6.20 MSHA acceptance of equivalent non-MSHA product safety standards.

(a) * * *

(1) Provide at least the same degree of protection as MSHA's product approval requirements in parts 14, 18, 19, 20, 33, 35 and 36 of this chapter; or

* * * * *

■ 4. Add new Part 14 to subchapter B chapter I, title 30 of Code of Federal Regulations to read as follows:

PART 14—REQUIREMENTS FOR THE APPROVAL OF FLAME-RESISTANT CONVEYOR BELTS

Subpart A—General Provisions

Sec.

14.1 Purpose and effective date for approval holders.
14.2 Definitions.
14.3 Observers at tests and evaluations.
14.4 Application procedures and requirements.
14.5 Test samples.
14.6 Issuance of approval.
14.7 Approval marking and distribution records.
14.8 Quality assurance.
14.9 Disclosure of information.
14.10 Post-approval product audit.
14.11 Revocation.

Subpart B—Technical Requirements

14.20 Flame resistance.
14.21 Laboratory-scale flame test apparatus.
14.22 Test for flame resistance of conveyor belts.
14.23 New technology.

Authority: 30 U.S.C. 957.

Subpart A—General Provisions

§ 14.1 Purpose, effective date for approval holders.

This Part establishes the flame resistance requirements for MSHA approval of conveyor belts for use in underground coal mines. Applications for approval or extensions of approval submitted after December 31, 2008, must meet the requirements of this Part.

§ 14.2 Definitions.

The following definitions apply in this part:

Applicant. An individual or organization that manufactures or controls the production of a conveyor belt and applies to MSHA for approval of conveyor belt for use in underground coal mines.

Approval. A document issued by MSHA, which states that a conveyor belt has met the requirements of this Part and which authorizes an approval marking identifying the conveyor belt as approved.

Extension of approval. A document issued by MSHA, which states that a change to a product previously approved by MSHA meets the requirements of this Part and which authorizes the continued use of the approval marking after the appropriate extension number has been added.

Flame-retardant ingredient. A material that inhibits ignition or flame propagation.

Flammable ingredient. A material that is capable of combustion.

Inert ingredient. A material that does not contribute to combustion.

Post-approval product audit. An examination, testing, or both, by MSHA of an approved conveyor belt selected by MSHA to determine if it meets the technical requirements and has been manufactured as approved.

Similar conveyor belt. A conveyor belt that shares the same cover compound, general carcass construction, and fabric type as another approved conveyor belt.

§ 14.3 Observers at tests and evaluations.

Representatives of the applicant and other persons agreed upon by MSHA and the applicant may be present during tests and evaluations conducted under this Part. However, if MSHA receives a request from others to observe tests, the Agency will consider it.

§ 14.4 Application procedures and requirements.

(a) *Application address.* Applications for approvals or extensions of approval under this Part may be sent to: U.S. Department of Labor, Mine Safety and Health Administration, Chief, Approval and Certification Center, 765 Technology Drive, Triadelphia, West Virginia 26059. Alternatively, applications for approval or extensions of approval may be filed online at *http://www.msha.gov* or faxed to: Chief, Mine Safety and Health Administration Approval and Certification Center at 304–547–2044.

(b) *Approval application.* Each application for approval of a conveyor belt for use in underground coal mines must include the information below, except any information submitted in a prior approval application need not be re-submitted, but must be noted in the application.

(1) A technical description of the conveyor belt, which includes:

(i) Trade name or identification number;

(ii) Cover compound type and designation number;

(iii) Belt thickness and thickness of top and bottom covers;

(iv) Presence and type of skim coat;

(v) Presence and type of friction coat;

(vi) Carcass construction (number of plies, solid woven);

(vii) Carcass fabric by textile type and weight (ounces per square yard);

(viii) Presence and type of breaker or floated ply; and

(ix) The number, type, and size of cords and fabric for metal cord belts.

(2) The name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application.

(c) Similar belts and extensions of approval may be evaluated for approval without testing using the BELT method if the following information is provided in the application:

(1) Formulation information on the compounds in the conveyor belt indicated by either:

(i) Specifying each ingredient by its chemical name along with its percentage (weight) and tolerance or percentage range; or

(ii) Specifying each flame-retardant ingredient by its chemical or generic name with its percentage and tolerance or percentage range or its minimum percent. List each flammable ingredient and inert ingredient by chemical,

generic, or trade name along with the total percentage of all flammable and inert ingredients.

(2) Identification of any similar approved conveyor belt for which the applicant already holds an approval, and the formulation specifications for that belt if it has not previously been submitted to the Agency.

(i) The MSHA assigned approval number of the conveyor belt that most closely resembles the new one; and

(ii) An explanation of any changes from the existing approval.

(d) *Extension of approval.* Any change in an approved conveyor belt from the documentation on file at MSHA that affects the technical requirements of this Part must be submitted for approval prior to implementing the change. Each application for an extension of approval must include:

(1) The MSHA-assigned approval number for the conveyor belt for which the extension is sought;

(2) A description of the proposed change to the conveyor belt; and

(3) The name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application.

(e) MSHA will determine if testing, additional information, samples, or material is required to evaluate an application. If the applicant believes that flame testing is not required, a statement explaining the rationale must be included in the application.

(f) *Equivalent non-MSHA product safety standard.* An applicant may request an equivalency determination to this part under § 6.20 of this chapter, for a non-MSHA product safety standard.

(g) *Fees.* Fees calculated in accordance with Part 5 of this chapter must be submitted in accordance with § 5.40.

§ 14.5 Test samples.

Upon request by MSHA, the applicant must submit 3 precut, unrolled, flat conveyor belt samples for flame testing. Each sample must be 60 ± ¼ inches long (152.4 ± 0.6 cm) by 9 ± ⅛ inches (22.9 ± 0.3 cm) wide.

§ 14.6 Issuance of approval.

(a) MSHA will issue an approval or notice of the reasons for denying approval after completing the evaluation and testing provided in this part.

(b) An applicant must not advertise or otherwise represent a conveyor belt as approved until MSHA has issued an approval.

§ 14.7 Approval marking and distribution records.

(a) An approved conveyor belt must be marketed only under the name specified in the approval.

(b) Approved conveyor belt must be legibly and permanently marked with the assigned MSHA approval number for the service life of the product. The approval marking must be at least ½ inch (1.27 cm) high, placed at intervals not to exceed 60 feet (18.3 m) and repeated at least once every foot (0.3 m) across the width of the belt.

(c) Where the construction of a conveyor belt does not permit marking as prescribed above, other permanent marking may be accepted by MSHA.

(d) Applicants granted approval must maintain records of the initial sale of each belt having an approval marking. The records must be retained for at least 5 years following the initial sale.

§ 14.8 Quality assurance.

Applicants granted an approval or an extension of approval under this Part must:

(a) In order to assure that the finished conveyor belt will meet the flame-resistance test—

(1) Flame test a sample of each batch, lot, or slab of conveyor belts; or

(2) Flame test or inspect a sample of each batch or lot of the materials that contribute to the flame-resistance characteristic.

(b) Calibrate instruments used for the inspection and testing in paragraph (a) of this section according to the instrument manufacturer's specifications. Instruments must be calibrated using standards set by the National Institute of Standards and Technology, U.S. Department of Commerce or other nationally or internationally recognized standards. The instruments used must be accurate to at least one significant figure beyond the desired accuracy.

(c) Control production so that the conveyor belt is manufactured in accordance with the approval document. If a third party is assembling or manufacturing all or part of an approved belt, the approval holder shall assure that the product is manufactured as approved.

(d) Immediately notify the MSHA Approval and Certification Center of any information that a conveyor belt has been distributed that does not meet the specifications of the approval. This notification must include a description of the nature and extent of the problem, the locations where the conveyor belt has been distributed, and the approval holder's plans for corrective action.

§ 14.9 Disclosure of information.

(a) All proprietary information concerning product specifications and performance submitted to MSHA by the applicant will be protected.

(b) MSHA will notify the applicant or approval holder of requests for disclosure of information concerning its conveyor belts, and provide an opportunity to present its position prior to any decision on disclosure.

§ 14.10 Post-approval product audit.

(a) Approved conveyor belts will be subject to periodic audits by MSHA to determine conformity with the technical requirements upon which the approval was based. MSHA will select an approved conveyor belt to be audited; the selected belt will be representative of that distributed for use in mines. Upon request to MSHA, the approval holder may obtain any final report resulting from the audit.

(b) No more than once a year, except for cause, the approval holder, at MSHA's request, must make 3 samples of an approved conveyor belt of the size specified in § 14.5 available at no cost to MSHA for an audit. If a product is not available because it is not currently in production, the manufacturer will notify MSHA when it is available. Representatives of the applicant and other persons agreed upon by MSHA and the applicant may be present during audit tests and evaluations. MSHA will also consider requests by others to observe tests.

(c) A conveyor belt will be subject to audit for cause at any time MSHA believes the approval holder product is not in compliance with the technical requirements of the approval.

§ 14.11 Revocation.

(a) MSHA may revoke for cause an approval issued under this Part if the conveyor belt—

(1) Fails to meet the technical requirements; or

(2) Creates a danger or hazard when used in a mine.

(b) Prior to revoking an approval, the approval holder will be informed in writing of MSHA's intention to revoke. The notice will—

(1) Explain the reasons for the proposed revocation; and

(2) Provide the approval holder an opportunity to demonstrate or achieve compliance with the product approval requirements.

(c) Upon request to MSHA, the approval holder will be given the opportunity for a hearing.

(d) If a conveyor belt poses an imminent danger to the safety or health of miners, an approval may be

immediately suspended without written notice of the Agency's intention to revoke.

Subpart B—Technical Requirements

§ 14.20 Flame resistance.

Conveyor belts for use in underground coal mines must be flame-resistant and:

(a) Tested in accordance with § 14.22 of this part; or

(b) Tested in accordance with an alternate test determined by MSHA to be equivalent under 30 CFR §§ 6.20 and 14.4(e).

§ 14.21 Laboratory-scale flame test apparatus.

The principal parts of the apparatus used to test for flame resistance of conveyor belts are as follows—

(a) A horizontal test chamber 66 inches (167.6 cm) long by 18 inches (45.7 cm) square (inside dimensions) constructed from 1 inch (2.5 cm) thick Marinite I®, or equivalent insulating material.

(b) A 16-gauge (0.16 cm) stainless steel duct section which tapers over a length of at least 24 inches (61 cm) from a 20 inch (51 cm) square cross-sectional area at the test chamber connection to a 12 inch (30.5 cm) diameter exhaust duct, or equivalent. The interior surface of the tapered duct section must be lined with ½ inch (1.27 cm) thick ceramic blanket insulation, or equivalent insulating material. The tapered duct must be tightly connected to the test chamber.

(c) A U-shaped gas-fueled impinged jet burner ignition source, measuring 12 inches (30.5 cm) long and 4 inches (10.2 cm) wide, with two parallel rows of 6 jets each. Each jet is spaced alternately along the U-shaped burner tube. The 2 rows of jets are slanted so that they point toward each other and the flame from each jet impinges upon each other in pairs. The burner fuel must be at least 98 percent methane (technical grade) or natural gas containing at least 96 percent combustible gases, which includes not less than 93 percent methane.

(d) A removable steel rack, consisting of 2 parallel rails and supports that form a 7 ± ⅛ inches (17.8 ± 0.3 cm) wide by 60 ± ⅛ inches (152.4 ± 0.3 cm) long assembly to hold a belt sample.

(1) The 2 parallel rails, with a 5 ± ⅛ inches (12.7 ± 0.3 cm) space between them, comprise the top of the rack. The rails and supports must be constructed of slotted angle iron with holes along the top surface.

(2) The top surface of the rack must be 8 ± ⅛ inches (20.3 ± 0.3 cm) from the inside roof of the test chamber.

§ 14.22 Test for flame resistance of conveyor belts.

(a) *Test procedures.* The test must be conducted in the following sequence using a flame test apparatus meeting the specifications of § 14.21:

(1) Lay three samples of the belt, 60 ± ¼ inches (152.4 ± 0.6 cm) long by 9 ± ⅛ inches (22.9 ± 0.3 cm) wide, flat at a temperature of 70 ± 10° Fahrenheit (21 ± 5° Centigrade) for at least 24 hours prior to the test;

(2) For each of three tests, place one belt sample with the load-carrying surface facing up on the rails of the rack so that the sample extends 1 ± ⅛ inch (2.5 ± 0.3 cm) beyond the front of the rails and 1 ± ⅛ inch (2.5 ± 0.3 cm) from the outer lengthwise edge of each rail;

(3) Fasten the sample to the rails of the rack with steel washers and cotter pins. The cotter pins shall extend at least ¾ inch (1.9 cm) below the rails. Equivalent fasteners may be used. Make a series of 5 holes approximately 9/32 inch (0.7 cm) in diameter along both edges of the belt sample, starting at the first rail hole within 2 inches (5.1 cm) from the front edge of the sample. Make the next hole 5 ± ¼ inches (12.7 ± 0.6 cm) from the first, the third hole 5 ± ¼ inches (12.7 ± 0.6 cm) from the second, the fourth hole approximately midway along the length of the sample, and the fifth hole near the end of the sample. After placing a washer over each sample hole, insert a cotter pin through the hole and spread it apart to secure the sample to the rail;

(4) Center the rack and sample in the test chamber with the front end of the sample 6 ± ½ inches (15.2 ± 1.27 cm) from the entrance;

(5) Measure the airflow with a 4-inch (10.2 cm) diameter vane anemometer, or an equivalent device, placed on the centerline of the belt sample 12 ± ½ inches (30.5 ± 1.27 cm) from the chamber entrance. Adjust the airflow passing through the chamber to 200 ± 20 ft/min (61 ± 6 m/min);

(6) Before starting the test on each sample, the inner surface temperature of the chamber roof measured at points 6 ± ½, 30 ± ½, and 60 ± ½ inches (15.2 ± 1.27, 76.2 ± 1.27, and 152.4 ± 1.27 cm) from the front entrance of the chamber must not exceed 95° Fahrenheit (35° Centigrade) at any of these points with the specified airflow passing through the chamber. The temperature of the air entering the chamber during the test on each sample must not be less than 50° Fahrenheit (10° Centigrade);

(7) Center the burner in front of the sample's leading edge with the plane, defined by the tips of the burner jets, ¾ ± ⅛ inch (1.9 ± 0.3 cm) from the front edge of the belt;

(8) With the burner lowered away from the sample, set the gas flow at 1.2 ± 0.1 standard cubic feet per minute (SCFM) (34 ± 2.8 liters per minute) and then ignite the gas burner. Maintain the gas flow to the burner throughout the 5 to 5.1 minute ignition period;

(9) After applying the burner flame to the front edge of the sample for a 5 to 5.1 minute ignition period, lower the burner away from the sample and extinguish the burner flame;

(10) After completion of each test, determine the undamaged portion across the entire width of the sample. Blistering without charring does not constitute damage.

(b) *Acceptable performance.* Each tested sample must exhibit an undamaged portion across its entire width.

(c) MSHA may modify the procedures of the flammability test for belts constructed of thicknesses more than ¾ inch (1.9 cm).

§ 14.23 New technology.

MSHA may approve a conveyor belt that incorporates technology for which the requirements of this part are not applicable if the Agency determines that the conveyor belt is as safe as those which meet the requirements of this part.

PART 18—ELECTRIC MOTOR-DRIVEN MINE EQUIPMENT AND ACCESSORIES

■ 5. The authority citation for Part 18 continues to read as follows:

Authority: 30 U.S.C. 957, 961.

§ 18.1 [Amended]

■ 6. Section 18.1 is amended by revising the phrase ''hoses and conveyor belts'' to read ''hoses''.

§ 18.2 [Amended]

■ 7. Section 18.2 is amended by revising the phrase ''hose or conveyor belt'' to read ''hose'' in the definitions of ''Acceptance'', ''Acceptance Marking'', and ''Applicant'' and removing the definition for ''Fire-resistant''.

§ 18.6 [Amended]

■ 8. Section 18.6(a)(1) is amended by revising the phrase ''hose or conveyor belt'' to read ''hose''.

■ 9. Section 18.6(c) is removed and reserved.

■ 10. Section 18.6(i) is amended by revising the phrase ''hose or conveyor belt'' to read ''hose'' and removing the words ''conveyor belt—a sample of each type 8 inches long cut across the entire width of the belt''.

§ 18.9 [Amended]

■ 11. Section 18.9(a) is amended by revising the phrase ''hose or conveyor belt'' to read ''hose''.

§ 18.65 [Amended]

■ 12. Section 18.65 is amended by revising the section heading to read ''Flame test of hose'' and by removing and reserving paragraph (a)(1) and removing and reserving paragraph (f)(1).

PART 48—TRAINING AND RETRAINING OF MINERS

■ 13. The authority citation for Part 48 continues to read as follows:

Authority: 30 U.S.C. 811, 825.

Subpart B—Training and Retraining of Miners Working at Surface Mines and Surface Areas of Underground Mines

■ 14. Amend § 48.27 to revise the first sentence in paragraph (a) introductory text to read as follows:

§ 48.27 Training of miners assigned to a task in which they have had no previous experience; minimum courses of instruction.

(a) Miners assigned to new work tasks as mobile equipment operators, drilling machine operators, haulage and conveyor systems operators, ground control machine operators, AMS operators, and those in blasting operations shall not perform new work tasks in these categories until training prescribed in this paragraph and paragraph (b) of this section has been completed.* * *

* * * * *

PART 75—MANDATORY SAFETY STANDARDS—UNDERGROUND COAL MINES

Subpart B—Qualified and Certified Persons

■ 15. The authority citation for Part 75 continues to read as follows:

Authority: 30 U.S.C. 811.

■ 16. Section 75.156 is added to read as follows:

§ 75.156 AMS operator, qualifications.

(a) To be qualified as an AMS operator, a person shall be provided with task training on duties and responsibilities at each mine where an AMS operator is employed in accordance with the mine operator's approved Part 48 training plan.

(b) An AMS operator must be able to demonstrate to an authorized representative of the Secretary that he/she is qualified to perform in the assigned position.

Subpart D—Ventilation

■ 17. In § 75.333, paragraph (c)(4) is added to read as follows:

§ 75.333 Ventilation controls.

* * * * *

(c) * * *

(4) An airlock shall be established where the air pressure differential between air courses creates a static force exceeding 125 pounds on closed personnel doors along escapeways.

* * * * *

■ 18. In § 75.350, paragraphs (a)(2), (b) introductory text, (b)(3), and (d)(1) are revised, and (b)(7) and (b)(8) are added to read as follows:

§ 75.350 Belt air course ventilation.

(a) * * *

(1) * * *

(2) Effective December 31, 2009, the air velocity in the belt entry must be at least 50 feet per minute. When requested by the mine operator, the district manager may approve lower velocities in the ventilation plan based on specific mine conditions. Air velocities must be compatible with all fire detection systems and fire suppression systems used in the belt entry.

(b) The use of air from a belt air course to ventilate a working section, or an area where mechanized mining equipment is being installed or removed, shall be permitted only when evaluated and approved by the district manager in the mine ventilation plan. The mine operator must provide justification in the plan that the use of air from a belt entry would afford at least the same measure of protection as where belt haulage entries are not used to ventilate working places. In addition, the following requirements must be met:

* * * * *

(3)(i) The average concentration of respirable dust in the belt air course, when used as a section intake air course, must be maintained at or below 1.0 mg/m^3.

(ii) Where miners on the working section are on a reduced standard below 1.0 mg/m^3, the average concentration of respirable dust in the belt entry must be at or below the lowest applicable respirable dust standard on that section.

(iii) A permanent designated area (DA) for dust measurements must be established at a point no greater than 50 feet upwind from the section loading point in the belt entry when the belt air flows over the loading point or no greater than 50 feet upwind from the point where belt air is mixed with air from another intake air course near the loading point. The DA must be specified and approved in the ventilation plan.

* * * * *

(7) The air velocity in the belt entry must be at least 100 feet per minute. When requested by the mine operator, the district manager may approve lower velocities in the ventilation plan based on specific mine conditions.

(8) The air velocity in the belt entry must not exceed 1,000 feet per minute. When requested by the mine operator, the district manager may approve higher velocities in the ventilation plan based on specific mine conditions.

* * * * *

(d) * * *

(1) The air current that will pass through the point-feed regulator must be monitored for carbon monoxide or smoke at a point within 50 feet upwind of the point-feed regulator. A second point must be monitored 1,000 feet upwind of the point-feed regulator unless the mine operator requests that a lesser distance be approved by the district manager in the mine ventilation plan based on mine specific conditions;

* * * * *

■ 19. Paragraph (b)(2), (e), and (q) of § 75.351 are revised to read as follows:

§ 75.351 Atmospheric monitoring systems.

* * * * *

(b) * * *

(2) The mine operator must designate an AMS operator to monitor and promptly respond to all AMS signals. The AMS operator must have as a primary duty the responsibility to monitor the malfunction, alert and alarm signals of the AMS, and to notify appropriate personnel of these signals. In the event of an emergency, the sole responsibility of the AMS operator shall be to respond to the emergency.

* * * * *

(e) *Location of sensors-belt air course.*

(1) In addition to the requirements of paragraph (d) of this section, any AMS used to monitor belt air courses under § 75.350(b) must have approved sensors to monitor for carbon monoxide at the following locations:

(i) At or near the working section belt tailpiece in the air stream ventilating the belt entry. In longwall mining systems the sensor must be located upwind in the belt entry at a distance no greater than 150 feet from the mixing point where intake air is mixed with the belt air at or near the tailpiece;

(ii) No more than 50 feet upwind from the point where the belt air course is combined with another air course or splits into multiple air courses;

(iii) At intervals not to exceed 1,000 feet along each belt entry. However, in areas along each belt entry where air velocities are between 50 and 100 feet per minute, spacing of sensors must not exceed 500 feet. In areas along each belt entry where air velocities are less than 50 feet per minute, the sensor spacing must not exceed 350 feet;

(iv) Not more than 100 feet downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up. If the belt drive, tailpiece, and/or take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor downwind of the last component. If the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up; and

(v) At other locations in any entry that is part of the belt air course as required and specified in the mine ventilation plan.

(2) Smoke sensors must be installed to monitor the belt entry under § 75.350(b) at the following locations:

(i) At or near the working section belt tailpiece in the air stream ventilating the belt entry. In longwall mining systems the sensor must be located upwind in the belt entry at a distance no greater than 150 feet from the mixing point where intake air is mixed with the belt air at or near the tailpiece;

(ii) Not more than 100 feet downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up. If the belt drive, tailpiece, and/or take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor downwind of the last component. If the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up; and

(iii) At intervals not to exceed 3,000 feet along each belt entry.

(iv) This provision shall be effective one year after the Secretary has determined that a smoke sensor is available to reliably detect fire in underground coal mines.

* * * * *

(q) *Training.*

(1) All AMS operators must be trained annually in the proper operation of the AMS. This training must include the following subjects:

(i) Familiarity with underground mining systems;

(ii) Basic atmospheric monitoring system requirements;

(iii) The mine emergency evacuation and firefighting program of instruction;

(iv) The mine ventilation system including planned air directions;

(v) Appropriate response to alert, alarm and malfunction signals;

(vi) Use of mine communication systems including emergency notification procedures; and

(vii) AMS recordkeeping requirements.

(2) At least once every six months, all AMS operators must travel to all working sections.

(3) A record of the content of training, the person conducting the training, and the date the training was conducted, must be maintained at the mine for at least one year by the mine operator.

* * * * *

■ 20. Section 75.352 is amended by revising paragraph (f) and by adding paragraph (g) to read as follows:

§ 75.352 Actions in response to AMS malfunction, alert, or alarm signals.

* * * * *

(f) If the minimum air velocity is not maintained when required under § 75.350(b)(7), immediate action must be taken to return the ventilation system to proper operation. While the ventilation system is being corrected, operation of the belt may continue only while a trained person(s) patrols and continuously monitors for carbon monoxide or smoke as set forth in §§ 75.352(e)(3) through (7), so that the affected areas will be traveled each hour in their entirety.

(g) The AMS shall automatically provide both a visual and audible signal in the belt entry at the point-feed regulator location, at affected sections, and at the designated surface location when carbon monoxide concentrations reach:

(1) The alert level at both point-feed intake monitoring sensors; or

(2) The alarm level at either point-feed intake monitoring sensor.

■ 21. Section 75.371 is amended by revising paragraphs (jj), (mm), (nn), and by adding paragraph (yy) to read as follows:

§ 75.371 Mine ventilation plan; contents.

* * * * *

(jj) The locations and approved velocities at those locations where air velocities in the belt entry are above or below the limits set forth in § 75.350(a)(2) or §§ 75.350(b)(7) and 75.350(b)(8).

* * * * *

(mm) The location of any diesel-discriminating sensor, and additional carbon monoxide or smoke sensors installed in the belt air course.

(nn) The length of the time delay or any other method used to reduce the number of non-fire related alert and alarm signals from carbon monoxide sensors.

* * * * *

(yy) The locations where the pressure differential cannot be maintained from the primary escapeway to the belt entry.

■ 22. Section 75.380 is amended by revising paragraphs (d)(7)(v) and (vi) and (f)(1) and adding paragraph (d)(7)(vii) to read as follows:

§ 75.380 Escapeways; bituminous and lignite mines.

* * * * *

(d) * * *

(7) * * *

(v) Equipped with one directional indicator cone securely attached to the lifeline, signifying the route of escape, placed at intervals not exceeding 100 feet. Cones shall be installed so that the tapered section points inby;

(vi) Equipped with one sphere securely attached to the lifeline at each intersection where personnel doors are installed in adjacent crosscuts;

(vii) Equipped with two securely attached cones, installed consecutively with the tapered section pointing inby, to signify an attached branch line is immediately ahead.

(A) A branch line leading from the lifeline to an SCSR cache will be marked with four cones with the base sections in contact to form two diamond shapes. The cones must be placed within reach of the lifeline.

(B) A branch line leading from the lifeline to a refuge alternative will be marked with a rigid spiraled coil at least eight inches in length. The spiraled coil must be placed within reach of the lifeline (see Illustration 1 below).

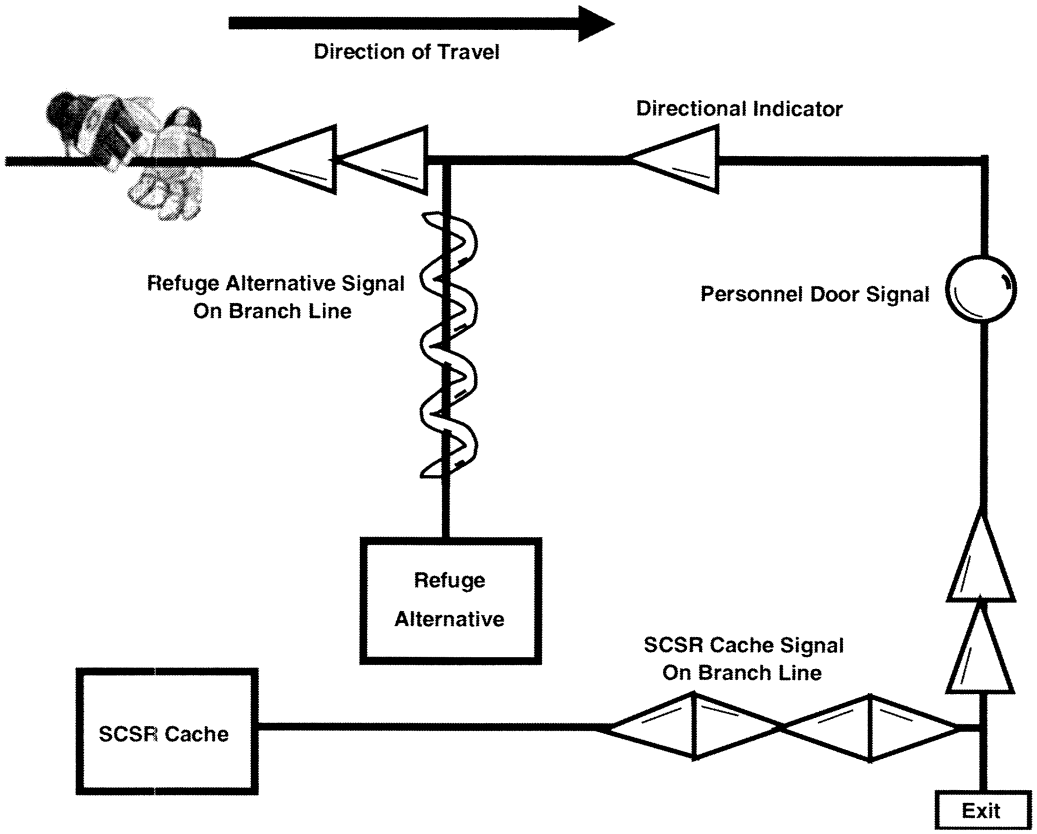


Illustration 1

* * * * *

(f) * * *

(1) One escapeway that is ventilated with intake air shall be designated as the primary escapeway. The primary escapeway shall have a higher ventilation pressure than the belt entry unless the mine operator submits an alternative in the mine ventilation plan to protect the integrity of the primary escapeway, based on mine specific conditions, which is approved by the district manager.

* * * * *

■ 23. Section 75.381 is amended by revising paragraphs (c)(5)(v) and (vi) and (e), and adding paragraph (c)(5)(vii) to read as follows:

§ 75.381 Escapeways; anthracite mines.

* * * * *

(c) * * *

* * * * *

(5) * * *

* * * * *

(v) Equipped with one directional indicator cone securely attached to the lifeline, signifying the route of escape, placed at intervals not exceeding 100 feet. Cones shall be installed so that the tapered section points inby;

(vi) Equipped with one sphere securely attached to the lifeline at each intersection where personnel doors are installed in adjacent crosscuts;

(vii) Equipped with two securely attached cones, installed consecutively with the tapered section pointing inby, to signify an attached branch line is immediately ahead.

(A) A branch line leading from the lifeline to an SCSR cache will be marked with four cones with the base sections in contact to form two diamond shapes. The cones must be placed within reach of the lifeline.

(B) A branch line leading from the lifeline to a refuge alternative will be marked with a rigid spiraled coil at least eight inches in length. The spiraled coil must be placed within reach of the lifeline.

* * * * *

(e) *Primary escapeway.* One escapeway that shall be ventilated with intake air shall be designated as the primary escapeway. The primary escapeway shall have a higher ventilation pressure than the belt entry unless the mine operator submits an alternative in the mine ventilation plan to protect the integrity of the primary escapeway, based on mine specific conditions, which is approved by the district manager.

* * * * *

Subpart L—Fire Protection

■ 24. Section 75.1103–4 is amended by revising paragraphs (a) and (b) to read as follows:

§ 75.1103–4 Automatic fire sensor and warning device systems; installation; minimum requirements.

(a) Effective December 31, 2009, automatic fire sensor and warning device systems that use carbon monoxide sensors shall provide identification of fire along all belt conveyors.

(1) Carbon monoxide sensors shall be installed at the following locations:

(i) Not more than 100 feet downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up. If the belt drive, tailpiece, and/or take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor downwind of the last component. If the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up;

(ii) Not more than 100 feet downwind of each section loading point;

(iii) Along the belt entry so that the spacing between sensors does not

exceed 1,000 feet. Where air velocities are less than 50 feet per minute, spacing must not exceed 350 feet; and

(iv) The mine operator shall indicate the locations of all carbon monoxide sensors on the mine maps required by §§ 75.1200 and 75.1505 of this part.

(2) Where used, sensors responding to radiation, smoke, gases, or other indications of fire, shall be spaced at regular intervals to provide protection equivalent to carbon monoxide sensors, and installed within the time specified in paragraph (a)(3) of this section.

(3) When the distance from the tailpiece at loading points to the first outby sensor reaches the spacing requirements in § 75.1103–4(a)(1)(iii), an additional sensor shall be installed and put in operation within 24 production shift hours. When sensors of the kind described in paragraph (a)(2) of this section are used, they shall be installed and put in operation within 24 production shift hours after the equivalent distance which has been established for the sensor from the tailpiece at loading points to the first outby sensor is first reached.

(b) Automatic fire sensor and warning device systems shall be installed so as to minimize the possibility of damage from roof falls and the moving belt and its load. Sensors must be installed near the center in the upper third of the entry, in a manner that does not expose personnel working on the system to unsafe conditions. Sensors must not be located in abnormally high areas or in other locations where air flow patterns do not permit products of combustion to be carried to the sensors.

* * * * *

■ 25. The section heading and paragraph (a) of § 75.1103–5 are revised and paragraphs (d), (e), (f), (g) and (h) are added to read as follows:

§ 75.1103–5 Automatic fire warning devices; actions and response.

(a) When the carbon monoxide level reaches 10 parts per million above the established ambient level at any sensor location, automatic fire sensor and warning device systems shall provide an effective warning signal at the following locations:

(1) At working sections and other work locations where miners may be endangered from a fire in the belt entry.

(2) At a manned surface location where personnel have an assigned post of duty. The manned surface location must have:

(i) A telephone or equivalent communication with all miners who may be endangered and

(ii) A map or schematic that shows the locations of sensors, and the intended air flow direction at these locations. This map or schematic must be updated within 24 hours of any change in this information.

(3) The automatic fire sensor and warning device system shall be monitored for a period of 4 hours after the belt is stopped, unless an examination for hot rollers and fire is made as prescribed in § 75.1103–4(e).

* * * * *

(d) When a malfunction or warning signal is received at the manned surface location, the sensors that are activated must be identified and appropriate personnel immediately notified.

(e) Upon notification of a malfunction or warning signal, appropriate personnel must immediately initiate an investigation to determine the cause of the malfunction or warning signal and take the required actions set forth in paragraph (f) of this section.

(f) If any sensor indicates a warning, the following actions must be taken unless the mine operator determines that the signal does not present a hazard to miners:

(1) Appropriate personnel must notify miners in affected working sections, in affected areas where mechanized mining equipment is being installed or removed, and at other locations specified in the approved mine emergency evacuation and firefighting program of instruction; and

(2) All miners in the affected areas, unless assigned emergency response duties, must be immediately withdrawn to a safe location identified in the mine emergency evacuation and firefighting program of instruction.

(g) If the warning signal will be activated during calibration of sensors, personnel manning the surface location must be notified prior to and upon completion of calibration. Affected working sections, areas where mechanized mining equipment is being installed or removed, or other areas designated in the approved emergency evacuation and firefighting program of instruction must be notified at the beginning and completion of calibration.

(h) If any fire detection component becomes inoperative, immediate action must be taken to repair the component. While repairs are being made, operation of the belt may continue if the following requirements are met:

(1) If one sensor becomes inoperative, a trained person must continuously monitor for carbon monoxide at the inoperative sensor;

(2) If two or more adjacent sensors become inoperative, trained persons must patrol and continuously monitor the affected areas for carbon monoxide so that they will be traveled each hour in their entirety. Alternatively, a trained person must be stationed at each inoperative sensor to monitor for carbon monoxide;

(3) If the complete fire detection system becomes inoperative, trained persons must patrol and continuously monitor the affected areas for carbon monoxide so that they will be traveled each hour in their entirety;

(4) Trained persons who conduct monitoring under this section must have two-way voice communication capability, at intervals not to exceed 2,000 feet, and must report carbon monoxide concentrations to the surface at intervals not to exceed one hour;

(5) Trained persons who conduct monitoring under this section must immediately report to the surface any concentration of carbon monoxide that reaches 10 parts per million above the established ambient level, unless the mine operator knows that the source of the carbon monoxide does not present a hazard to miners; and

(6) Handheld detectors used to monitor the belt entry under this section must have a detection level equivalent to that of the system's carbon monoxide sensors.

■ 26. Section 75.1103–6 is revised to read as follows:

§ 75.1103–6 Automatic fire sensors; actuation of fire suppression systems.

Point-type heat sensors or automatic fire sensor and warning device systems may be used to actuate deluge-type water systems, foam generator systems, multipurpose dry-powder systems, or other equivalent automatic fire suppression systems.

■ 27. Section 75.1103–8 is revised to read as follows:

§ 75.1103–8 Automatic fire sensor and warning device systems; examination and test requirements.

(a) Automatic fire sensor and warning device systems shall be examined at least once each shift when belts are operated as part of a production shift. A functional test of the warning signals shall be made at least once every seven days. Examination and maintenance of such systems shall be by a qualified person.

(b) A record of the functional test conducted in accordance with paragraph (a) of this section shall be maintained by the operator and kept for a period of one year.

(c) Sensors shall be calibrated in accordance with the manufacturer's calibration instructions at intervals not to exceed 31 days. A record of the

sensor calibrations shall be maintained by the operator and kept for a period of one year.

■ 28. Section 75.1103–10 is revised to read as follows:

§ 75.1103–10 Fire suppression systems; additional requirements.

For each conveyor belt flight exceeding 2,000 feet in length, where the average air velocity along the belt haulage entry exceeds 100 feet per minute, an additional cache of the materials specified in § 75.1103–9(a)(1), (2), and (3) shall be provided. The additional cache may be stored at the locations specified in § 75.1103–9(a), or at some other strategic location readily accessible to the conveyor belt flight.

■ 29. Section 75.1108 is revised to read as follows:

§ 75.1108 Approved conveyor belts.

(a) Until December 31, 2009 conveyor belts placed in service in underground coal mines shall be:

(1) Approved under Part 14; or

(2) Accepted under Part 18.

(b) Effective December 31, 2009 conveyor belts placed in service in underground coal mines shall be approved under Part 14. If MSHA determines that Part 14 approved belt is not available, the Agency will consider an extension of the effective date.

(c) Effective December 31, 2018 all conveyor belts used in underground coal mines shall be approved under Part 14.

■ 30. Remove § 75.1108–1.

Subpart R—Miscellaneous

■ 31. Section 75.1731 is added to read as follows:

§ 75.1731 Maintenance of belt conveyors and belt conveyor entries.

(a) Damaged rollers, or other damaged belt conveyor components, which pose a fire hazard must be immediately repaired or replaced. All other damaged rollers, or other damaged belt conveyor components, must be repaired or replaced.

(b) Conveyor belts must be properly aligned to prevent the moving belt from rubbing against the structure or components.

(c) Materials shall not be allowed in the belt conveyor entry where the material may contribute to a frictional heating hazard.

(d) Splicing of any approved conveyor belt must maintain flame-resistant properties of the belt.

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