



MSHA Actions to Enhance Mine Safety January 2009 Update

Mine Improvement and New Emergency Response (MINER) Act:

On June 15, 2006, President George W. Bush signed the MINER Act into law. As of January 2009, the Mine Safety and Health Administration's (MSHA) actions to implement the Act include:

- **A Final Rule on Flame-Resistant Conveyor Belt, Fire Prevention and Detection, and Use of Air From the Belt Entry:** On December 31, 2008, the MSHA final rule that implements the recommendations of the Technical Study Panel (Panel) on the Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Material in Underground Coal Mining was posted on the *Federal Register's* website. The Secretary established the Panel in accordance with Section 11 of the Mine Improvement and New Emergency Response (MINER) Act of 2006. The Panel conducted an independent scientific engineering review and issued its report on December 20, 2007. MSHA issued a proposed rule on June 19, 2008 and conducted four public hearings.

This final rule includes requirements for improved flame-resistant conveyor belts in underground coal mines. The final rule also includes requirements for fire prevention and detection in belt entries, standardized tactile signals on lifelines, and approval of the use of air from the belt entry to ventilate working sections.

Final rule requires underground coal mine operators to:

- Place in service conveyor belts that are more flame resistant than those currently used beginning one year after the effective date of the final rule (all existing belts must be replaced within 10 years).
- Request District Manager approval in the mine ventilation plan to use air from the belt entry to ventilate working sections.
- Replace point-type heat sensors with carbon monoxide sensors.

Other major provisions require operators to:

- Improve belt maintenance by requiring belts to be aligned, damaged rollers to be replaced, and by prohibiting materials in the belt entry where they may contribute to a frictional heating hazard.
- Standardize signals on lifelines in escapeways to identify direction of travel to the surface, SCSR storage caches, personnel doors and refuge alternatives.
- Require training of Atmospheric Monitoring System (AMS) operators and make monitoring the AMS a primary responsibility (during an emergency the sole responsibility).

- Require the primary escapeway to have a higher ventilating pressure than the belt entry to prevent the primary escapeway from being contaminated by a fire in the belt entry.
- Establish airlocks where high air pressure differentials exist on personnel doors along escapeways to allow safe access to adjacent entries.
- Establish minimum and maximum air velocities in belt entries to assure appropriate fire detection.
- Require lower dust levels in belt entries for mines that use air from the belt entry to ventilate a working section if the working section is on a reduced (lower than 1.0 mg/m³) dust standard.
- Install smoke sensors in addition to carbon monoxide sensors in mines that use air from the belt entry to ventilate the working section. Smoke sensors would be required one year after approval for use in underground coal mines.
- **A Final Rule on Refuge Alternatives:** On December 31, 2008, the MSHA final rule on refuge alternatives was posted on the *Federal Register's* web site. The final rule requires underground coal mines to provide refuge alternatives to protect miners when a life-threatening event occurs that makes escape impossible and implements Section 13 of the MINER Act. The final rule is based on the Agency's data and experience, recommendations from a National Institute for Occupational Safety and Health (NIOSH) report on refuge alternatives, research on available and developing technology, the regulations of several states, and public comments and hearing testimony on the proposed rule published in the *Federal Register* on June 16, 2008.

Under the final rule, a refuge alternative provides a protected, secure space with an isolated atmosphere that creates a life-sustaining environment to protect miners in the event that escape from the mine is not possible. The final rule requires that the manufacturer or third party test a refuge alternative and its components -- structural, breathable air, air monitoring, and harmful gas removal -- prior to obtaining MSHA approval.

The final rule requires underground coal mine operators to:

- Address the location, capability, and capacity of refuge alternatives in written Emergency Response Plans;
- Train miners to locate, transport, deploy, use, and maintain refuge alternatives; training can be integrated into existing quarterly drills and annual expectations training;
- Conduct pre-shift examinations of refuge alternatives and components; and
- Locate refuge alternatives on mine maps.

Other Major Provisions:

- Two types of refuge alternatives are allowed:
 - Pre-fabricated self-contained units; and
 - Units consisting of 15 psi stoppings constructed prior to an event in a secure space and an isolated atmosphere.
- Grandfathering:
 - Prefabricated refuge alternatives approved by States or by MSHA in the Emergency Response Plan that are in service prior to the effective date (60 days

- after publication of the final rule) are allowed until replaced, or 10 years after date of publication, whichever comes first (includes purchase orders for prefabricated units with a confirmed delivery date prior to December 31, 2009);
 - Refuge alternative components of either prefabricated units or units consisting of 15 psi stoppings approved by States or by MSHA in the Emergency Response Plan that are in service prior to the effective date (60 days after publication of the final rule) are allowed until replaced, or 5 years after date of publication, whichever comes first; and
 - Refuge alternatives consisting of materials pre-positioned for miners to deploy in a secure space with an isolated atmosphere that MSHA has accepted in the Emergency Response Plan that are in service prior to the effective date (60 days after publication of the final rule) are allowed until replaced, or 2 years after date of publication, whichever comes first.
- Refuge alternatives need at least 15 square feet of floor space and, depending on mining heights, 30 to 60 cubic feet of volume per person. The airlock can be included as useable space. For locations:
 - Near the working section, the capacity is the maximum number of persons that can be expected.
 - In an outby area, the capacity is the maximum number of persons reasonably expected to use the refuge alternative.
- Refuge alternatives need to be located:
 - Within 1,000 feet from the nearest working face and from locations where mechanized mining equipment is being installed or removed. For underground anthracite coal mines that have no electrical face equipment, refuge alternatives are required if the nearest working face is greater than 2,000 feet from the surface.
 - Within 1-hour travel distances in outby areas. The operator may request, and the district manager may approve, a different location based on an assessment of risks to persons in outby areas.
- Refuge alternatives and their components need to sustain persons for 96 hours, or 48 hours if advance arrangements are made for additional supplies from the surface.
- Food, water, lighting, first-aid supplies, and sanitation are required.
- A two-way communication system that is part of the mine communication system, which can be used from inside the refuge alternative, and an additional communication system and other requirements as defined in the operator's approved Emergency Response Plan are required.
- **A Final Rule on Mine Seals:** On April 18, 2008, MSHA published a final rule replacing the May 22, 2007 Emergency Temporary Standard (ETS) that increased protections for miners who work in underground coal mines with sealed off abandoned areas. Although Section 10 of the MINER Act gave MSHA until December 2007 to issue a new standard on mine seals, MSHA concluded that an emergency standards was necessary in May 2007 to protect miners, based on MSHA's accident investigations of the Sago and Darby mine explosions, in-mine seal evaluations, and reports on explosion testing and modeling. The final rule and ETS went beyond the MINER Act – which requires that the standard on mine seals be

greater than the 20 pounds per square inch (psi) established in 1992 – to include requirements to strengthen the design, construction, maintenance and repair of seals, as well as requirements for sampling and controlling atmospheres behind seals.

The final rule requires the following improvements for mine safety:

- Air sampling behind seals that are less than 120 psi and withdrawal of miners when an atmosphere behind the seal is explosive.
- Removal of potential ignition sources from sealed areas. If insulated cables cannot be removed safely, seal must be constructed to at least 120 psi.
- A three-tiered approach as in the ETS, which requires additional seal strength where sealed atmospheres are more dangerous.
- A certified supervisor for construction and repair of seals with senior management of the mine operator required to certify seal compliance with the MSHA-approved ventilation plan.
- Increased training for those involved in seal sampling, construction and repair.
- Requirements for certification of seal designs.
- Enhanced recordkeeping to ensure compliance.

Seal manufacturers and mine operators have six months to submit revised seal applications and ventilation plans, respectively, to comply with the final rule. The seal manufacturers and mine operators must act quickly because the final rule replaces the seals ETS and takes effect immediately.

- **A Final Rule on Mine Rescue Teams:** On February 8, 2008, to implement Section 4 of the MINER Act, MSHA published a final rule that increases training standards, as well as improves overall mine rescue capability, mine emergency response time and mine rescue team effectiveness. The final rule includes the following safety and health improvements:
 - Requires a person knowledgeable in mine emergency response be present at each mine on each shift and receive annual emergency response training using an MSHA-prescribed course.
 - Requires two certified mine rescue teams for each mine and includes criteria for certifying the qualifications of a mine rescue team.
 - Requires mine rescue team members be available at the mine within one hour from the mine rescue station.
 - Requires team members to participate in training at each mine serviced by the team (a portion of which must be conducted underground), and be familiar with the operations and ventilation of the mine.
 - Requires team members to participate annually in two local mine rescue contests.
 - Provides for four types of mine rescue teams: mine-site, composite, contract and state-sponsored.
 - Requires annual training in smoke, simulated smoke or an equivalent environment.
 - Increases required training from 40 to 96 hours annually.
- **A Final Rule on Civil Penalties:** After passage of the MINER Act, MSHA immediately implemented increased penalties for late accident notification and “unwarrantable failure” violations. On Oct. 26, 2006, MSHA issued a Procedure Instruction Letter (PIL) to implement the “flagrant” violation provision of the MINER Act. On March 22, 2007, MSHA published a final rule to increase civil penalty amounts for all mine safety and health

violations. Issuance of this rule goes beyond the requirements of the MINER Act and demonstrates MSHA's commitment to protect the safety and health of our nation's miners. MSHA has already assessed 69 flagrant violations, 13 of which were assessed fines at the \$220,000 maximum. These are the largest proposed penalties in the agency's history.

As prescribed by the Act, the final rule:

- Establishes a maximum penalty of \$220,000 for "flagrant" violations, as proposed in the President's previous budgets.
- Sets minimum penalty amounts of \$2,000 and \$4,000 for "unwarrantable failure citations and orders."
- Effective March 10, 2008, imposes a minimum penalty of \$5,000 (up to a maximum of \$60,000) for failure to timely notify MSHA of a death or an injury or entrapment with a reasonable potential to cause death.

Other major provisions of the final rule applicable to all mine operators and contractors:

- Significantly increases civil penalties overall - targeting the most serious safety and health violations with escalating penalties.
- Adds a new provision to increase penalties - notwithstanding the severity - for operators who *repeatedly* violate MSHA standards.
- Replaces the \$60 single penalty with higher formula assessments for non-significant and substantial (non-S&S) violations.

These actions have resulted in a substantial increase in civil penalties issued from \$35 million in CY 2006, to \$75 million in CY 2007, to \$194 million in CY 08.

- **Approval of Emergency Response Plans (ERPs):** Emergency Response Plans have been approved and are being implemented for all underground coal mines as specified in the Act except where manufacturers are unable to supply material. Plans must address post-accident communications (i.e., "redundant communications" until 2009, at which time a two-way, "wireless system" or close alternative is required), tracking, and increased air supplies for trapped miners. As of December 11, 2008, there are 596 fully approved ERPs and two ERPs submitted awaiting review.
- **Mandated Post-Accident Breathable Air:** On February 8, 2007, MSHA issued a Program Information Bulletin (PIB) providing mine operators guidance concerning acceptable ways to fulfill the breathable air requirements in the MINER Act. Options for providing acceptable quantities of breathable air for trapped miners are:
 - 1) Drilling boreholes within 2,000 feet of the working sections of mines;
 - 2) Having 48 hours of breathable air located within 2,000 feet of working sections coupled with contingency plans for drilling boreholes if miners are not rescued within 48 hours;
 - 3) Having 96 hours of breathable air within 2,000 feet of working sections; or
 - 4) Other options that provide equivalent protection.
- **Family Liaisons:** On November 1, 2006, the Secretary of Labor signed an Order establishing the Family Liaison and Primary Communicator positions. To date, MSHA has trained 46 family liaisons. The National Transportation Safety Board and the American Red Cross have helped train these individuals.

- **Underground to Surface Communications Systems in Coal Mines:** As of January 5, 2009, MSHA has observed testing or demonstration of 58 communications and/or tracking systems at various mine sites. We have met with representatives from 67 communications and tracking system companies. To date, we have had discussions with various vendors regarding 182 different proposals for development of mine communications and tracking systems. MSHA is currently focusing its resources on the evaluation of approval applications for communications and tracking technology. Since the beginning of 2006, we have issued 67 new or revised approvals for communications and tracking products, including the first approval for a wireless tracking system in January. We are currently investigating 37 approval applications for communications and tracking technology. We continue to work with the Communications Partnership Working Group sponsored by the NMA/BCOA to arrange for demonstrations of additional systems. MSHA met with NIOSH on March 14, 2008, to discuss underground communications and tracking technology. MSHA and NIOSH are working jointly to develop criteria for acceptable alternative communication systems in the event that two-way wireless communications systems are not available by 2009 as required by the MINER Act.

On December 18, 2008, MSHA posted a notice in the Federal Register requesting comments on a Program Policy Letter (PPL) that would provide mine operators guidance for implementing the MINER Act requirements for wireless communications and electronic tracking systems. The comment period closes on January 8, 2009.

- **Brookwood-Sago Grants:** On July 25, 2007, MSHA published a *Federal Register* notice soliciting applications for Brookwood-Sago grants. In October 2007, MSHA awarded approximately half a million dollars in grants to seven organizations to develop new training modules and best practices materials to improve miner training. MSHA published the solicitation for 2008 grant applications in July and awarded half a million dollars to seven organizations in October 2008.

Other Improvement to Mine Safety and Health:

In addition to the requirements of the MINER Act, MSHA has developed and implemented a number of other important improvements to mine safety and health over the past two years, including:

- **A Proposed Rule on Alcohol- and Drug-Free Mines:** On September 8, 2008, MSHA published in the *Federal Register* a proposed rule on Alcohol- and Drug-Free Mines: Policy, Prohibitions, Testing, Training and Assistance. The rule would establish a uniform drug and alcohol standard for all mines by amending the existing standards for metal and nonmetal mines and by establishing requirements for coal mines.

This proposal would significantly enhance miner safety by reducing the hazards posed by miners who use alcohol or drugs and perform safety-sensitive job functions. The proposed rule would prohibit miners from possessing or using alcohol and drugs while on mine property and from being under the influence of alcohol or other prohibited substances when performing safety-sensitive job functions.

- **A Final Rule on Mine Rescue Team Equipment:** MSHA's final rule on mine rescue team equipment was published in the Federal Register on September 15, 2008. Having proper equipment available at mine rescue stations is an essential element of ensuring effective mine rescue capabilities. The final rule updates MSHA's existing standards for equipment required for mine rescue teams serving underground coal and metal and nonmetal mines to increase safety and improve the overall effectiveness of mine rescue teams.

MSHA published the proposed rule for Mine Rescue Team Equipment on September 6, 2007. The Agency held four public hearings. In response to a request, MSHA extended the original comment period on the proposed rule from November 9 to November 16, 2007.

The requirements of the Mine Rescue Team Equipment Rule include:

- 1) Four-hour (rather than two-hour) self-contained breathing apparatuses (SCBAs);
- 2) Two (rather than one) extra oxygen bottles per six SCBAs;
- 3) Eight hours (rather than six hours) of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals and carbon dioxide absorbent chemicals to maintain SCBAs for a longer period of time; and
- 4) Four (rather than two) gas detectors appropriate for each gas that may be encountered.
- 5) Detectors for methane must be capable of measuring concentrations from 0.0% to 100% of volume;
- 6) Detectors for oxygen must be capable of measuring from 0.0% to at least 20% of volume; and
- 7) Detectors for carbon monoxide must be capable of measuring from 0.0 ppm to at least 9,999 ppm.

The final rule also removes obsolete requirements for flame safety lamps and oxygen indicators.

- **A Final Rule on Fire Extinguishers for Underground Coal Mines:** MSHA's final rule on fire extinguishers for underground coal mines was published in the *Federal Register* on September 15, 2008. The final rule updates MSHA's existing standard to increase safety and improve the effectiveness of firefighting equipment on working sections at most underground anthracite mines and at temporary electrical installations in all underground coal mines.

MSHA's existing standard for the quantity and location of firefighting equipment in underground coal mines did not accommodate the typical conditions in working sections of underground anthracite coal mines, and caused unnecessary compliance difficulties for some mines with temporary electrical installations underground. MSHA routinely granted petitions for modification of these provisions. The final rule incorporates the alternative compliance methods in granted petitions, which provide at least the same level of protection for miners as the existing standard. MSHA published the proposed rule for Fire Extinguishers in Underground Coal Mines on December 20, 2007. The Agency received no comments. The final rule is the same as the proposal.

Requirements of the Final Rule:

- 1) Allows the use of portable fire extinguishers in working sections of underground

anthracite coal mines that have no electrical equipment at the face and produce less than 300 tons of coal per shift, in lieu of existing requirements for rock dust and other firefighting equipment; and

2) Requires an additional fire extinguisher in lieu of rock dust at temporary electrical installations in all underground coal mines. MSHA has found that rock dust can be rendered ineffective by dampness. A portable fire extinguisher is more effective and reliable, readily available, and easy to transport.

- **Diesel Particulate Matter (DPM) Notice:** On May 20, 2008, MSHA published a notice of enforcement of the DPM final limit of 160 micrograms of total carbon (TC) per cubic meter of air (160TC $\mu\text{g}/\text{m}^3$) and withdrawal of intent to issue a proposed rule converting the total carbon exposure limit to an equivalent for elemental carbon. MSHA's decision ensures that miners at underground metal and nonmetal mines have improved protection against exposure to diesel particulate matter. MSHA made this decision because it had insufficient scientific evidence to support an appropriate conversion factor from total carbon to elemental carbon. To ensure the exposure limit is fairly enforced, MSHA has developed a practical sampling strategy, which is based on the best available scientific evidence and is mine-specific, to account for sampling interferences from non-diesel exhaust sources.
- **A Final Rule on Asbestos Exposure:** On February 29, 2008, MSHA published a final rule in the federal register that revised MSHA's existing health standards for asbestos exposure at metal and nonmetal mines, surface coal mines and surface areas of underground coal mines. This final rule will help improve health protection for miners who work in an environment where asbestos is present and will help lower the risk of material impairment of health or functional capacity over a miner's working lifetime. The Asbestos Exposure Limit final rule:
 - Retains MSHA's existing definition of asbestos, which is the same as that of the Labor Department's Occupational Safety and Health Administration (OSHA).
 - Lowers MSHA's Permissible Exposure Limit (PEL) for asbestos 95 percent, from two fibers per cubic centimeter (f/cc) to 0.1 f/cc, which is the same as OSHA's; and lowers the excursion limit for brief exposures to higher levels from 10 f/cc (for 15 minutes) to one f/cc (for 30 minutes), which is the same as OSHA's. These lower PELs will significantly reduce the risk to miners.
 - Retains MSHA's existing method for analyzing asbestos samples (phase-contrast microscopy or PCM) and the existing counting criteria (particles 5 micrometers or longer with a length to diameter ratio of at least 3 to 1), which are the same as OSHA's. By policy, MSHA will continue to use transmission electron microscopy (TEM) to confirm samples that exceed the PEL (0.1 f/cc).
- **Office of Accountability:** On June 28, 2007, MSHA announced the creation of the Office of Accountability. Charles J. Thomas was appointed Director of the office on November 13, 2007. The purpose of this office is to increase focused oversight and examination of existing enforcement programs within the agency. This new division conducts oversight reviews, including in-mine inspections, to ensure that management controls are in place and fully implemented to maintain consistent and effective enforcement policies and procedures, and to ensure the implementation of actions recommended as a result of MSHA audits and

internal reviews. The director of this office reports directly to the Office of the Assistant Secretary. The Office of Accountability conducted its first audit in January 2008, and has conducted 27 audits to date.

- **A Final Rule on Mine Evacuation:** On December 8, 2006, MSHA issued a final rule to strengthen mine evacuation practices in five key areas. The rule was based on an Emergency Temporary Standard (ETS) issued on March 9, 2006.
 - **Self-Contained Self Rescue (SCSR) Devices:** The rule requires coal mine operators to provide additional SCSRs for each miner underground in areas such as working places, on mantrips, in escapeways, and where outby crews work or travel. The rule also requires that they be readily accessible in the event of an emergency.
 - **Multi-Gas Detectors:** The rule goes beyond the requirements of the MINER Act by requiring coal mine operators to provide multi-gas detectors to miners working alone and to each group of miners.
 - **Lifelines:** The rule requires coal mine operators to install directional lifelines in all primary and alternate escape routes out of the mine. Lifelines help guide miners in poor visibility conditions toward evacuation routes and SCSR storage locations. In accordance with the MINER Act, lifelines must be fire-resistant by June 15, 2009.
 - **Training:** The rule requires coal mine operators to conduct quarterly training for miners in how to don SCSRs and especially how to transfer from one SCSR to another at a cache location. SCSR training units for annual expectations training have now been developed. On March 30, 2007, MSHA published a notice in the *Federal Register* notifying mine operators that the units were available. Mine operators must have had a purchase order for these training units by April 30, 2007, and must conduct training with them within 60 days of receipt of the units.
 - **Accident Notification:** The rule requires all mine operators to “immediately contact” MSHA after an accident (within 15 minutes of its occurrence).
- **100% Inspection Plan:** To make sure MSHA has an increased presence at mining operations, last October Assistant Secretary Richard Stickler announced the implementation of MSHA’s new 100% Inspection Plan. The successful implementation of this plan marks the first time in the 31-year history of the Agency that MSHA has completed 100% of mandated regular safety and health inspections. The Plan calls for the temporary reassignment of MSHA inspectors to areas where they are most needed and provides for increased overtime hours that are needed to complete inspections until all new inspector trainees are fully qualified. In FY 2008, this resulted in approximately 190,000 hours of overtime, shifting personnel from their home districts to districts of need, and better oversight and tracking of inspections by both the districts and headquarters. Furthermore, MSHA has developed a monthly Key Indicator report to track progress in each field office and district toward reaching the 100% completion rate.
- **New Mine Inspectors:** MSHA has been aggressively hiring coal enforcement personnel. Since July 2006, MSHA has hired more than 370 new coal enforcement personnel. It takes approximately 18 months for an inspector-in-training to become an Authorized Representative (AR) of the Secretary who is qualified to conduct inspections and issue citations and/or orders. Once fully certified, these new enforcement personnel will provide MSHA with more coal enforcement personnel than at any point since 1994. In addition, the Metal and Nonmetal Safety and Health program has begun a similar hiring initiative that,

once complete, will place Metal and Nonmetal's enforcement ranks at their highest level in more than 20 years. To date, Metal and Nonmetal has hired 89 new enforcement personnel.

- **Prosecution of Bad Actors:** Since February 2006, MSHA has filed four unprecedented lawsuits seeking injunctions against mine operators who have chronically failed to pay assessed civil money penalties for violations of the Mine Act. They have all settled favorably, and the mine operators and their agents are under injunction from further failures to pay civil penalties. Additionally in 2007, MSHA filed two cases in the 6th Circuit Court of Appeals against two mine operators to enforce payment of overdue civil penalties.

On January 22, 2008, a former mine foreman was sentenced in Federal District Court for the Eastern District of Kentucky, having previously plead guilty to one misdemeanor count of knowingly failing to clean up coal dust accumulations. The former foreman was sentenced to three months in prison followed by one year supervised release and a \$25 fine. As a special condition, the Court ordered that former foreman not be affiliated with the mining industry in any capacity during his probation.

MSHA attempts to obtain payment for delinquent debt and, when these efforts fail, the agency refers the debt to the Treasury Department's Financial Management Services for collection. As part of these collection efforts, MSHA regularly evaluates civil penalty delinquencies to identify mine operators that continually fail to pay their civil penalty assessments and, in conjunction with the attorneys from the Department's Office of the Solicitor (SOL), singles out the biggest offenders for possible legal and/or enforcement action.

On November 18, 2008, one of the top offenders with delinquent penalties totaling in excess of \$276,000 over the last year was sent a letter by Department attorneys notifying them that enforcement action would be taken if they failed to pay. On December 2, 2008, an agreement was reached requiring the operator to satisfy the outstanding debt of over \$276,000 within a 6 month period. The agreement also stipulates that the operator will satisfy all future assessed civil penalties on or before the due date prior to becoming delinquent.

Another operator with a track record of failing to pay \$150,000 of delinquent MSHA penalties was referred to the Treasury Department for collection. On October 9, 2008, the Labor Department's Office of the Solicitor sent a certified letter to advising the operator of their unpaid MSHA penalties and asking them to pay (or present evidence of payment) no later than October 28, 2008. On November 14, 2008, MSHA issued another citation to the operator for failing to pay \$2,771.52 in delinquent MSHA penalties for violations and noting that MSHA was ready to issue an order withdrawing all miners from the mine until the penalties were paid. On December 5, 2008 the operator paid the delinquent penalties of \$2,771.52.

- **Special Emphasis Programs - Retreat Mining:** Beginning in February 2007, MSHA initiated special emphasis inspection programs in Southern West Virginia and Eastern Kentucky to examine roof control plans and roof support methods in mines that use retreat mining methods.

- **Special Health Emphasis Program – Respirable Dust:** In February 2007, MSHA conducted a nationwide targeted Special Health Emphasis enforcement program to ensure operator compliance with the applicable respirable dust standard.
- **Pattern of Violations:** MSHA has developed a database and computerized screening system to identify mines that may have a pattern of violations. In June 2007, MSHA issued potential “pattern of violations” notices to eight mine operators. Six of the eight mine operations significantly improved their safety records, reducing their significant and substantial (S&S) violation rates by an average of over 50 percent. One of the other mines that received a warning has been inactive since July 2007 and the other mine underwent a change in ownership. MSHA monitored the progress of the mine that changed ownership and that operation subsequently reduced S&S violation rates by over 30 percent.

In December 2007, MSHA notified 20 additional mine operators that they met the criteria for potential pattern of violations. These mine operators all instituted corrective action plans and MSHA closely monitored their progress in reducing serious violations. The results were dramatic; with 20 mines reducing S&S violation rates an average of 65%. Although MSHA regulations require an annual screening of mines to identify those exhibiting a potential pattern of violations, the agency has performed its third screening since last June. The third screening identified 13 coal mines and 2 metal and nonmetal mines with notifications delivered to the mine operators in June 2008.

- **“Great Escape” Prototype:** A prototype system developed for miners faced with an underground mine emergency, was unveiled November 8, 2007, at MSHA’s Approval and Certification Center in Triadelphia, West Virginia. The system provides miners a constant supply of breathable air, along with a rapid, safe means of escape through an isolated, structurally protected escape path. The system also safely protects communications and tracking systems from fire and explosive forces.
- **Revised Handbooks:** MSHA has updated and revised its handbooks to provide clarity and ensure consistency. Handbooks set forth proper procedures, establish guidelines and provide instructions for conducting required MSHA duties.
 - ***Alternative Case Resolution (ACR) Handbook:*** Revised to reflect current practices and provide Conference Litigation Representatives (CLR) and inspectors better guidance and more transparency and accountability in resolving cases.
 - ***General Coal Mine Inspection Procedures Handbook and Inspection Tracking System:*** Revised to provide greater clarity, consistency and efficiency in inspection procedures. Included checklists and tracking system to monitor and document completion of inspections and to require inspection notes indicating that the inspector observed or determined that gas calibrations are being performed on schedule.
 - ***Carbon Monoxide (CO) and Atmospheric Monitoring Systems (AMS) Inspection Procedures Handbook:*** Consolidated and updated evacuation, SCSR donning and use, fire and escapeway drills and AMS systems into one instruction manual. Revisions provide increased clarity and consistency for inspections in underground coal mines.
 - ***Coal’s Safety and Health Supervisors Handbook:*** Revised to improve supervisory oversight of inspections, investigations conducted by enforcement personnel and to ensure work products and field activities are complete and thorough and in compliance with agency policies and procedures.

- ***Citation and Order Writing Handbook:*** Updated citation and order writing procedures for agency inspectors and provided more guidance on evaluating gravity, negligence and number of persons affected. Incorporated statutory requirements of the Mine Improvement and New Emergency Response Act of 2006 (MINER Act) and other regulatory revisions, including changes to the civil penalty structure.
 - ***Headquarter Mine Emergency Response Guidelines Handbook:*** Revised to streamline and update organizational structure of the agency. New requirements of the MINER Act such as family liaison and primary communicator responsibilities are included. Revisions also include a review committee for evaluating MSHA's response to each mine emergency that involves rescue and recovery.
 - ***Coal and Metal and Nonmetal's Accountability Procedures Handbook:*** Revisions include using a risk-based process to prioritize the review of inspection and enforcement activities. Also included is the requirement of addressing root causes of deficiencies that will lead to the prevention of recurrences, as well as rigorous follow-up and monitoring to prevent duplication of past problems.
 - ***Hazard Conditions Complaint Handbook:*** The handbook provides guidance to MSHA compliance personnel in responding to and processing hazard complaints. It is intended to assist in achieving consistency in those activities. The handbook establishes guidelines for receiving, evaluating, responding to, and processing safety and health complaints received from miners, representatives of miners, and others. It also establishes procedures to process appeals by miners or their representatives when they disagree with a decision by an Authorized Representative (AR) to not issue a citation or order as a result of a written Section 103(g) complaint.
- **Inspection Tracking System:** MSHA also developed an Inspection Tracking System (ITS) to supplement the recently revised inspection handbook. The ITS is fully integrated with the handbook and provides a uniform way for inspectors to document each item they inspect and to enhance MSHA's ability to evaluate inspection progress and compliance with procedures. This tracking system also enables other inspection personnel to access the inspection results in a timely manner and safeguards inspection information.