

Agency Response to Draft Report

U.S. Department of Labor

Mine Safety and Health Administration  
1100 Wilson Boulevard  
Arlington, Virginia 22209-3939



MAR 26 2009

MEMORANDUM FOR ELLIOT P. LEWIS

Assistant Inspector General  
for Audit

FROM:

RICHARD E. STICKLER  
Acting Assistant Secretary for  
Mine Safety and Health

A handwritten signature in black ink that reads "Richard E. Stickler".

SUBJECT:

Response to Draft Report  
No. 05-08-003-06-001  
"MSHA Could Not Show It Made the Right Decision in  
Approving the Roof Control Plan at Crandall Canyon Mine"

Thank you for the opportunity to review and comment on your Draft Audit Report, *MSHA Could Not Show It Made the Right Decision in Approving the Roof Control Plan at Crandall Canyon Mine*. The report "was not designed to and does not make any ... determinations" regarding the cause of the tragedy at Crandall Canyon, "including what role, if any, the roof control plan might have played." (Report pg. 2). Rather, the report examines the Mine Safety and Health Administration's (MSHA) process for approving roof control plans and makes several useful recommendations for improving this process.

Because MSHA's Accident Investigation is still ongoing, I will not comment in detail on the report's factual conclusions at this time. However, MSHA appreciates and concurs with the report's recommendations -- several of which MSHA was in the process of implementing at the time it received your report. Please find attached a response detailing how MSHA will respond to each recommendation, thereby further enhancing the safety of our nation's miners.

MSHA can - and will - make changes to its standard operating procedures to improve its effectiveness, but it is misleading to the public to characterize the Agency's performance as "negligent" based on the evidentiary record cited in the report.

I am also concerned about the report's implication, unsupported by evidence, that MSHA may have been subject to "undue influence." We were glad to read that the OIG could not conclude "whether the mine operator had received preferential treatment in these decisions."

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However, despite this statement, the report then improperly places on the agency the nearly impossible burden to prove a negative, charging that “MSHA could not show that ... the process was free from undue influence by the mine operator.” (Report pg. 1) Indeed, while the report fairly concludes that there was inadequate documentation of the Crandall Canyon roof control plan approval process, the lack of documentation does not by itself prove that MSHA was unduly influenced. The only items the report cites as potential indications of undue influence are a Murray Energy memorandum showing that they requested that MSHA expedite its review of the roof control plan for the North Barrier, and Murray Energy e-mails indicating that they needed an expedited review of the roof control plan for the South Barrier. Not only are these communications not evidence of undue influence, but the report does not recognize several important countervailing facts MSHA provided to OIG auditors.

For example, the report fails to note that the District Manager told OIG auditors that, when justified, he prioritized the sequence of plan reviews, rather than allowing unnecessary delays by the agency to force mines to shut down and put miners out of work. The report also does not note that by the time Murray Energy requested expedited review of the roof control plan for the North Barrier, the plan had already been cleared by MSHA for signature by the District Manager, rendering it highly unlikely that Murray Energy’s request could have influenced the approval process.

In the end, the report specifically acknowledges that the OIG was unable to conclude whether MSHA gave preferential treatment to the mine operator in MSHA’s plan review process. Thus, the overall heading could more appropriately have stated that “there is no evidence that the mine operator unduly influenced MSHA’s plan approval process.” (Report pg. 17)

I am also concerned about the report’s conclusion that MSHA was “negligent” in carrying out its responsibility to protect the safety of miners. The report points to several shortcomings in MSHA’s documentation of its roof control approval process – shortcomings the agency has committed to address – and in certain cases identifies missed opportunities to proactively enhance safety protections, but the report does not provide evidence that MSHA negligently breached its duty to protect miners through its administration of the Mine Act.

For example, although the report finds that there were four sources of potentially relevant information the agency failed to consider in the roof control plan approval process at Crandall Canyon, it overlooks several important facts that were made known to your auditors:

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- (1) The report faults MSHA for failing to solicit “input from mine inspectors” before approving the roof control plan – yet the report does not recognize the fact that the local inspector and roof control specialist traveled with the Roof Control Supervisor in an underground inspection of the mine before the plan was approved;
- (2) The report faults MSHA for failing to seek “assistance from MSHA’s Technical Support Directorate” – yet the report does not mention that the Roof Control Specialist who reviewed the plan was a professional engineer with years of experience as Chief of MSHA’s former Technical Support Center in Denver;
- (3) The report faults MSHA for failing to consider the “history of seismic activity” at Crandall Canyon – yet the report does not recognize the fact that experts at NIOSH and the University of Utah have stated their agreement with the District Manager that historical information of seismic activity has little predictive value with respect to future activity;
- (4) The report faults MSHA for failing to consider “Bureau of Land Management inspection results” - yet the report makes no mention of the fact that none of MSHA’s criteria for approving a roof control plan included consultation with the Bureau of Land Management.

As mentioned above, there is still an ongoing MSHA accident investigation, as well as an independent internal review of the August 6 and 16, 2007 accidents at the Crandall Canyon Mine. In the meantime we will continue to aggressively implement important improvements that we had identified prior to your report, along with the OIG’s additional recommendations. It is my sincere hope that your work, and that of the accident and independent review teams, will enable us to continue to improve the health and safety of our nation’s miners.

If you have any questions, please contact Ken Bullock at 202-693-9778.

Thank you for your consideration.

Attachment

**MSHA RESPONSE TO INSPECTOR GENERAL’S RECOMMENDATIONS  
ON CRANDALL CANYON MINE**

The following are the corrective measures that the Mine Safety and Health Administration (MSHA) will implement to address the recommendations contained in the Office of Inspector General’s (OIG) Report.

**OIG Recommendation No. 1:** Develop a rigorous, standard, and transparent process delineating required tasks and analyses to be completed, and information to be considered, by District Offices in evaluating and approving proposed roof control plans.

**MSHA Response:** MSHA concurs with this recommendation, and MSHA will initiate five corrective actions. First, MSHA will develop a standard, detailed, and comprehensive national checklist for all roof control plan approvals. To establish uniformity and consistency, all districts will utilize the checklist when reviewing roof control plans. Since systems of mining, mining methods, and mine conditions vary regionally and even within districts, some of the checklist items may not be applicable in all cases. However, checklist items found not to be applicable during the MSHA review process can be marked N/A.

Next, the national roof control plan approval process will be standardized to ensure consistent reviews. The process will include facets such as the plan approval process in general, a roof control plan checklist, a general safety precautions checklist, a retreat mining checklist, and a mobile roof support checklist.

Third, a memorandum of instruction from the Administrator for Coal Mine Safety and Health (CMS&H) will be prepared and sent to all district managers indicating that mine operators will be required to submit all input data and/or information, used by them or consultants, to determine that a roof control plan submittal is adequate.

Fourth, to assure technical quality and integrity of the plans, MSHA will issue guidance regarding what type of roof control or ground support plans must be sent to MSHA’s Technical Support Roof Control Division for peer review and concurrence.

Finally, MSHA will finalize and issue a Program Information Bulletin (PIB) on retreat mining software, which was already under development prior to OIG’s report. The PIB will provide guidance on the proper use of the National Institute for Occupational Safety and Health’s (NIOSH) Analysis of Retreat Mining Pillar Stability (ARMPS) program and alert the industry of the availability of the latest

version of the program. Although ARMPS is just one modeling program that can be used for mine design, it is the most widely used, relatively easy to use and can give a “first approximation” of pillar stability. ARMPS minimum pillar stability factors are provided in the PIB.

MSHA expects to implement all of these corrective actions within 60 days of the issuance of the OIG report.

**OIG Recommendation No.2:** Establish a policy requiring risk assessments specific to the particular mining operation prior to plan approval (e.g., seismic activity, history of the mine, depth of mine, coal strength, stability factors of pillars, etc.).

**MSHA Response:** MSHA concurs with the goal of this recommendation, but believes the OIG’s examples of risk factors may be incomplete or not applicable in every situation. MSHA will prepare a letter from the Administrator for CMS&H to mine operators requesting detailed and comprehensive information to include: review and submittal of technical and engineering data, listing of potential or known hazards, and other factors requested by the district manager for non-typical roof control plans or amendments. Mine operators will be required to address how the proposed plan(s) will address the identified and potential mining hazards when providing the submittal information to MSHA.

As indicated in the response to Recommendation No. 1, MSHA is developing a PIB to provide guidance on the proper use of NIOSH’s Analysis of Retreat Mining Pillar Stability (ARMPS) program and to alert the industry of the availability of the latest version of the program. Although ARMPS is just one modeling program that can be used for mine design, it is the most widely used, and can give a “first approximation” of pillar stability. ARMPS minimum pillar stability factors are provided in the PIB.

MSHA expects to implement the above corrective actions within 60 days of the issuance of the OIG report.

A second PIB addressing general guidelines for the use of numerical modeling will also be developed. This PIB will provide guidance on items such as the type of information that should be provided in any submittal to MSHA that is used in support of a roof plan approval.

MSHA expects to implement the above corrective action within 120 days of the issuance of the OIG report. Additional time is needed for this corrective action because of the complexity of the numerical modeling needed to develop this PIB.

In addition, West Virginia University (WVU) has an ongoing project to develop guidelines for the use of the LAMODEL computer program. Once those guidelines have been established, a PIB specifically addressing the use of LAMODEL will be issued within 60 days.

**OIG Recommendation No. 3:** Establish explicit criteria and guidance for assessing the quality of, and potential safety risk associated with, proposed plans.

**MSHA Response:** MSHA concurs with this recommendation and has already been working on providing more explicit criteria and guidance.

MSHA Technical Support's Roof Control Division, in collaboration with NIOSH, published a pillar recovery risk factor checklist in a December 2005 technical paper. This checklist includes key risk factors such as production pillar design, barrier pillar design, final pillar stump design, mobile roof supports, supplemental roof support, geologic hazards, equipment operator locations, intersection spans, multiple seam interaction, depth of cover, age of mine workings, and type of coal haulage system. MSHA will use this checklist to develop the criteria for identifying potential problems in specific retreat mining plans.

MSHA expects to implement the above corrective action within 180 days of the issuance of the OIG report. Additional time is needed because of the complexity of developing the criteria and guidance and it is anticipated that some of the findings and recommendations of the Crandall Canyon accident investigation report will be incorporated into the criteria and guidance. Also, since the original pillar recovery checklist was jointly developed with NIOSH, their input and concurrence will also need to be sought.

MSHA will also send a letter from the Administrator for CMS&H to coal mine operators requesting detailed and comprehensive information to include: review and submittal of technical and engineering data, potential hazards and other factors requested by the district manager for non typical roof control plans or amendments. This memorandum will be responsive to both OIG Recommendation Nos. 2 and 3.

MSHA expects to implement the above corrective action within 60 days of the issuance of the OIG report.

**OIG Recommendation No. 4:** Issue policy and guidance on the use of computer models, including appropriateness of input values and use of model results.

**MSHA Response:** MSHA concurs with this recommendation. MSHA provided training for 60 of its employees in November and December 2007 on NIOSH and *Rocscience Phase<sup>2</sup>* software was purchased and installed in both CMS&H and Metal Nonmetal districts, as well as in MSHA headquarters, and the Triadelphia and Pittsburgh Office of Technical Support centers. The *Rocscience Examine<sup>3d</sup>* software was purchased and installed in the Triadelphia and Pittsburgh Office of Technical Support centers. The NIOSH Analysis of Retreat Mining Pillar Stability (ARMPS) and their Analysis of Longwall Pillar Stability (ALPS) were also made available for use by the districts, from the NIOSH website. NIOSH and WVU also provided training for all attendees on ARMPS, ALPS, and LAMODEL.

MSHA Technical Support is developing and will issue agency policy and guidance for the use of computer models such as Analysis of Retreat Mining Pillar Stability (ARMPS) and LAMODEL. The guidance will stress and emphasize the importance and appropriateness of modeling, input values, and use of model results to enhance roof and ground control plans, thereby providing a higher level of safety and predictive significance.

MSHA expects to implement these corrective actions for policy guidance on the use of ARMPS within 60 days of the issuance of the OIG report. Policy guidance on the use of LAMODEL will be issued by MSHA within 60 days after WVU's LAMODEL guidelines have been established.

**OIG Recommendation No. 5:** Issue policy mandating active oversight by District Managers by requiring documentation of how they reached their conclusions that approved plans will provide effective roof control.

**MSHA Response:** MSHA concurs with this recommendation. The Administrator for CMS&H will prepare a memorandum to the district managers requiring documentation be kept in the roof control review files explaining the rationale behind the approval of plans. The documentation will include a completed checklist showing a full plan review with signatures and comments of those participating in the reviews.

MSHA expects to implement this corrective action within 60 days of the issuance of the OIG report.

**OIG Recommendation No. 6:** Require inspectors to document the work they perform in (a) effectively questioning miners on mining activities and conditions in the mine, and their basis for concluding on (b) the continued adequacy of roof control plans and (c) the completion and adequacy of miner training on such plans.

**MSHA Response:** MSHA concurs with this recommendation and already has policies requiring such documentation. MSHA inspectors are required to document inspection activities through the MSHA Inspection Tracking System (ITS), and as required by the *General Coal Mine Inspection & Inspection Tracking System Handbook*. Inspectors record areas of the mine inspected on a checklist as well as mining activities and mine conditions. When violations are identified, inspectors further record information in their notes, detailing the activities, conditions, or practices giving rise to violations. Samples of inspector tests for the quality of mine atmospheres and air quantity readings are also recorded. All CMS&H enforcement personnel are trained on usage of the ITS and note-taking.

The adequacy of roof control plans, including their continued suitability and applicability to in-mine conditions and mining methods is specifically addressed by MSHA's use of Form 2000-204, where inspectors record their evaluations of the roof control plans and identify current conditions that would warrant attention or action by MSHA relative to plan efficacy. MSHA believes proper use of Form 2000-204 assures the adequacy of plan review and efficacy.

The completion and adequacy of miner training for plans is addressed on Page 44, Item 10 of the *General Coal Mine Inspection & Inspection Tracking System Handbook*. Item 10, "Mining/Work Cycle," reads, "The inspector shall observe the complete mining cycle on each active producing working section. The physical condition of the working section (roof and rib conditions, cleanup/rock dusting, ventilation controls, approved plan compliance, etc.) shall be carefully evaluated during these inspection activities." It should be noted that observation of the work cycle includes reviewing the applicable mining plans for suitability and compliance.

Requirements for documentation from the *General Coal Mine Inspection & Inspection Tracking System Handbook* state, in part:

***Documentation Required:*** *Inspector observation of the complete mining/work cycle shall be documented in the hard-copy inspection notes to show the mechanized mining unit number (MMU), the method of mining (continuous mining advance, continuous mining retreat, conventional mining advance, blasting from the solid advance, etc.) the date observation of the mining/work cycle was started, and the date this procedure was fully completed for that MMU.*

*A short statement such as “No Violations Observed” or “NVO” shall be included when no hazards or violations are observed. Additionally, observation of complete mining cycle shall be documented in the Inspection Tracking System MMU Log to show the MMU number, the date started and the date fully completed. No other documentation is required unless a violation is observed.*

To reinforce these requirements and address OIG recommendations, the Administrator for CMS&H will issue a memorandum to the district managers and enforcement personnel reiterating the importance of discussing with and questioning miners on mining activities and conditions in the mine, the basis for plan protections, the continued adequacy of roof control plans, and the completion and adequacy of miner training on such plans. The memorandum will reiterate that roof control plans are to be reviewed on a six month basis and that the necessary documentation must accompany such evaluations. The memorandum will further require that retreat mining sections must be visited at least monthly by a roof control specialist. Finally, the memorandum will instruct districts to request assistance from MSHA’s Educational Field Services (EFS) to evaluate training on retreat mining plans.

MSHA expects to issue this memorandum to address the OIG recommendation within 60 days of the issuance of the OIG report.

**OIG Recommendation No. 7:** Issue policy establishing the conditions under which non-rescue activities and non-rescue personnel would be allowed on site during active rescue operations.

**MSHA Response:** MSHA concurs with this recommendation. The Administrator for CMS&H will issue a memorandum to all district managers regarding rescue and non-rescue personnel. In accordance with the memorandum, district managers will ensure that only appropriate parties are granted access to the mine site and surface areas. The memorandum will address affected rescue personnel, non-rescue personnel, and non-rescue activities on mine sites during mine emergency and rescue operations, as well as security during mine emergency operations, cooperation with local emergency services, and access to surface and underground areas of the mine. The instructions of the memorandum will be designed to ensure safe, timely, and effective rescue and recovery operations.

MSHA expects to implement this corrective action within 60 days of the issuance of the OIG report.

**OIG Recommendation No.8:** Establish a Memorandum of Understanding with the Bureau of Land Management to share inspection or other information on mine conditions affecting safety.

**MSHA Response:** MSHA concurs with this recommendation and has been working with the Bureau of Land Management (BLM) on sharing information since last fall. The parties are currently developing a formal Memorandum of Understanding (MOU).

Following the tragedy at Crandall Canyon, MSHA became fully aware of the potential value in obtaining information from BLM inspectors as to serious safety hazards they may have observed in the course of inspections in underground coal mines.

The Department of Labor (DOL) and the Department of Interior opened a dialogue on the topic of information sharing between the two agencies in October 2007. The Acting Assistant Secretary for Mine Safety and Health has met with the Assistant Secretary for Land and Minerals Management at the Department of Interior and discussed a potential agreement between the two agencies that would allow MSHA to obtain BLM inspection data and other information on mine conditions affecting safety. A draft MOU document has been developed and discussions to finalize the agreement are ongoing and should conclude shortly.

Additionally, in Denver, Colorado, MSHA and BLM personnel familiar with Western mining conditions held an extensive meeting in which they explored the practicalities of potential information sharing. Continued dialogue and exchange of mine condition information with the MSHA District 9 Office in Denver and the local BLM office will be an important aspect for assurance of MSHA's full knowledge of mine conditions in the Western regions.

MSHA expects to finalize the MOU within 60 days of the issuance of the OIG report.

**OIG Recommendation No. 9:** Conduct a new review, consistent with the recommendations in this report, of all existing roof control plans.

**MSHA Response:** MSHA concurs with this recommendation. MSHA currently reviews roof control plans twice annually for each underground coal mine, and as stated in the above response to OIG Recommendation No. 1, is developing a standard, detailed, and comprehensive national checklist for all roof control plan

approvals. To establish uniformity and consistency, all districts will be required to utilize the new checklist when reviewing roof control plans.

The collective bargaining agreement between MSHA and the National Council of Field Labor Locals (NCFL), which is the recognized bargaining unit for MSHA's mine inspectors, requires the consent of the NCFL prior to MSHA's implementation of new forms like the checklist. After agreement is reached with the NCFL, CMS&H will immediately require that the approved checklist be used by inspectors during the very next review of roof control plans for each mine.

MSHA expects to implement the checklist and hopes to have the concurrence of the NCFL within 60 days of the issuance of the OIG report.