

Utah Mine Safety Commission

**Report and Recommendations to
Governor Jon M. Huntsman, Jr.**



January 2008



JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah

UTAH MINE SAFETY COMMISSION

SCOTT M. MATHESON, JR.
Commission Chairman

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January 23, 2008

The Honorable Jon M. Huntsman, Jr.
Governor's Office
P.O. Box 142220
State Capitol Complex, Suite E220
Salt Lake City, Utah 84114-2220

Subject: Utah Mine Safety Commission Report and Recommendations

Dear Governor Huntsman:

On behalf of the Utah Mine Safety Commission, I am transmitting this report based on the work we have accomplished since you established the Commission by executive order on August 27, 2007.

In the immediate aftermath of the Crandall Canyon Mine disaster, you asked the Commission to study the state's role in coal mine safety, accident prevention, and accident response and to make recommendations. The Commission has worked diligently. We have held numerous open and public hearings, including sessions in Helper, Huntington, Price, and Salt Lake City. We have heard presentations from many speakers. We have received extensive comment and materials to aid us in this work.

We have benefitted greatly from the information and recommendations of our Technical Advisory Committee led by Professor M.K. McCarter, Chair, Department of Mining Engineering at the University of Utah, and including academic experts, industry leaders, and others experienced in coal mining. We also have received outstanding volunteer research assistance from law students at the University of Utah S.J. Quinney College of Law. I especially want to acknowledge John Baza, Director of the Division of Oil, Gas, & Mining (OGM), and his staff for their able support of the Commission's work. As Executive Secretary for the Commission, Mr. Baza has provided dedicated service to this effort while continuing to lead his division.

I also would like to mention Jim Allen. He is an Assistant Attorney General and the recipient of the Patrick O'Hara Fellowship in the Office of the Utah Attorney General. A lawyer with mining engineering training and experience, Mr. Allen has worked tirelessly in the preparation of this report. We would not have completed this report without his hard work and expertise, and I wish to thank him on behalf of my colleagues for his service to the Commission.

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The Honorable Jon M. Huntsman, Jr.

January 23, 2008

The task has been challenging. The Mine Safety and Health Administration (MSHA) investigation of the Crandall Canyon tragedy is ongoing. As you know, we have not had the benefit of information from that investigation. The situation is dynamic with investigative and legislative activity in the U.S. Congress, new technological developments, and MSHA adjustments in how it regulates mine safety. Commission members brought diverse points of view to the issues at hand. Through it all, we stayed focused on the common goal to find steps the state can and should take to improve mine safety and reached consensus on numerous recommendations.

As this report explains, the recommendations are tailored, as they should be, to coal mining conditions in Utah. They will require additional development and analysis, but they offer a significant step forward in enabling the state to promote coal mine safety in Utah. They call for careful review from both the executive and legislative branches of state government, and some of them call for immediate action. We look to your best judgment on the next steps that should be taken. It has been an honor for each of us to serve, and we thank you for the confidence and trust you placed in all of us.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Scott M. Matheson, Jr.", is written over the typed name and title. The signature is fluid and cursive, with a large loop at the end.

Scott M. Matheson, Jr.

Chair

Dedication



This report is dedicated to the memory of those individuals who perished in the Crandall Canyon Mine tragedy. These men will be remembered by their families, fellow miners, and communities for their commitment and sacrifice. It is our hope that this report and its recommendations will be used to improve safety for all who work in Utah's coal mines, and that the deaths at Crandall Canyon will serve as a constant reminder that safety for our coal miners is a paramount goal and obligation.

Mine workers who died following the initial mine bump on August 6, 2007:

Kerry Allred
Don Erickson
Luis Hernandez
Carlos Payan
Brandon Phillips
Manuel Sanchez

Mine rescue workers who died following the mine bump on August 16, 2007:

Dale Black
Gary Jensen
Brandon Kimber

Members of the Utah Mine Safety Commission

Chairman:

Scott M. Matheson, Jr. Professor, S. J. Quinney College of Law, University of Utah

Executive Secretary:

John R. Baza Director, Utah Division of Oil, Gas and Mining

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Jake Garn	Former Senator, United States Senate
Hilary Gordon	Mayor, Huntington City
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Dennis O'Dell	Head of Mine Safety, United Mine Workers of America
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Introduction

On August 27, 2007, 21 days after the Crandall Canyon Mine collapsed and trapped six miners, and 11 days after another bounce at Crandall Canyon killed three rescuers and injured six others, Governor Jon M. Huntsman, Jr. issued an executive order to establish the Utah Mine Safety Commission. The Governor appointed eight individuals to serve on the Commission. He asked them to review the role of the State of Utah in the areas of mine safety, accident prevention, and accident response. Although he did not ask the Commission to investigate the cause(s) of the Crandall Canyon Mine disaster or to determine any fault for its occurrence, the Governor did ask the Commission to consider what happened at Crandall Canyon in assessing the state's role in coal mine safety, accident prevention, and emergency response. The Commission was directed to consider the roles of private industry and the federal government relative to the state's role in securing the safety of Utah's coal miners.



The Commission commenced its work immediately. It has held ten open public meetings in Helper, Huntington, Price, and Salt Lake City. It has received presentations from miners, mine company officials, union leaders, community members, federal and state land management

agency officials, academic experts, education administrators, Mine Safety and Health Administration (MSHA) officials, state and local emergency response officials, state certification officials, and many others. It has received written comments and has collected extensive materials pertinent to its mandate. Law students volunteered through the Pro Bono Initiative Program at the University of Utah S.J. Quinney College of Law and provided valuable research on various states' mine safety programs and other topics. The Commission formed a Technical Advisory Committee consisting of academic experts, industry leaders,

and others experienced in coal mining to address technical issues and make recommendations. Professor M.K. McCarter, Chair of the Department of Mining Engineering at the University of Utah, chairs this committee, which has provided excellent assistance and recommendations to the Commission.

The Commission's work has progressed in conjunction with several official investigations of the Crandall Canyon Mine disaster. Committees in both the House and Senate of the U.S. Congress have held hearings and continue to review this matter. MSHA initiated its accident investigation process, which is ongoing and includes Utah State Labor Commissioner Sherrie Hayashi as the state's representative. Although the Commission sought information from that investigation, MSHA decided that it would not provide the access that it has allowed in previous investigations. Nonetheless, MSHA officials, including the head of the Crandall Canyon investigation, participated at one of the Commission's hearings and provided useful information throughout the Commission's work.

The Commission quickly recognized the wisdom of Governor Huntsman's decision to initiate a review process that focuses on the role of the state in mine safety, accident prevention, and accident response. None of the other investigative processes in the aftermath of Crandall Canyon is examining the role of the states in general or the State of Utah in particular. In fact, no serious review of the state's role in coal mine safety has been conducted since the state ceased to be involved in mine inspection during the late 1980's. As the following report makes clear, the Commission has concluded that the state can take steps to improve coal mining safety in Utah, especially at a time when the industry is experiencing high levels of retirements in all positions of operations, and the same is occurring in the mine safety inspectorate.

The Commission recognizes that in coal mining, every region is different, every state is different, and every mine is different. The challenge of federal safety regulation is to be sufficiently flexible and adaptable to meet the widely varying mining conditions across the country. For three decades, the Utah coal community has relied almost exclusively on MSHA to provide safety regulation.

The central question for the Commission is whether the state can add valuable safety improvements to the current federal regulatory system. Although every mine is different, Utah coal mining operations share some common features and face similar challenges. All of Utah's coal mines are underground operations at deeper levels and with greater overburden than mines in other states. These features present risks that are not encountered in other states.

The Commission received valuable information from several of the companies that mine coal in Utah. The Commissioners commended them for their safety programs and their commitment to develop a culture of safety. The Commission applauds the goal of "zero accidents" promoted by Consol Energy CEO J. Brett Harvey as a worthy objective for the industry and for everyone involved in coal mine safety, including the State of Utah. The Commission further recognizes and appreciates the willingness of Utah operators to work with the state on programs to improve safety for all coal miners.

This report provides an overview of the coal industry in Utah and emphasizes its long history as a source of economic support not only for the working families in Utah's coal country, but for all citizens in the state, and elsewhere, who benefit from energy produced from coal. The report includes a summary of federal legislative and regulatory developments that address coal mine safety. It also presents information about how other coal-producing states address safety issues in their coal mines. It briefly discusses the history of state participation in coal mine safety inspection, and then describes the current role of the State of Utah in coal mine safety, which essentially is limited to testing and certification of miners. The report includes information about the Crandall Canyon Mine disaster that gives valuable context for this report, including the role of the state in the emergency response and family support activities.

Finally, this report presents the Commission's recommendations in the areas of state safety oversight, technical and research, education and training, testing and certification, emergency response, and accident investigation. The 45 recommendations in this report represent substantial study, work, and discussion. The Commissioners always worked to achieve the goal of

determining what the State of Utah can and should do to foster coal mine safety. Although the Commission members sometimes disagreed about the means to that end, they all worked with a common purpose and were willing to work together to develop a set of practical and constructive recommendations.

The Commission offers these recommendations with the fervent hope that they will improve safety for each and every miner in the State of Utah. They are offered with the understanding that many of them are just the starting point for further analysis and development of an effective state mine safety policy. The Commission was asked to review, study, and recommend; it has no policy-making authority. The Commissioners understood at the beginning, and appreciate even more now, that the area of coal mine safety is challenging and complex. Although the Commission heard from many different perspectives and from people with valuable experience and expertise, it is time to broaden the discussion further to include public officials with decision-making authority and others with additional experience and expertise.

The Commission has appreciated the opportunity to participate in this process and thanks the Governor for his confidence and trust. We look forward to his best judgment, and that of the Legislature, on the best way to proceed in meeting the solemn obligation to the memory of the nearly 500 individuals who died at Crandall Canyon, Willow Creek, Wilberg, Hardscrabble Canyon, Spring Canyon, Sunnyside, Kenilworth, New Peerless, Standardville, Rains, Castle Gate, Scofield, and other Utah coal mine disasters: that the State of Utah does what it can and should to promote safe coal mining for all Utah coal miners and their families.

Chapter 1 - Utah's Coal Industry¹

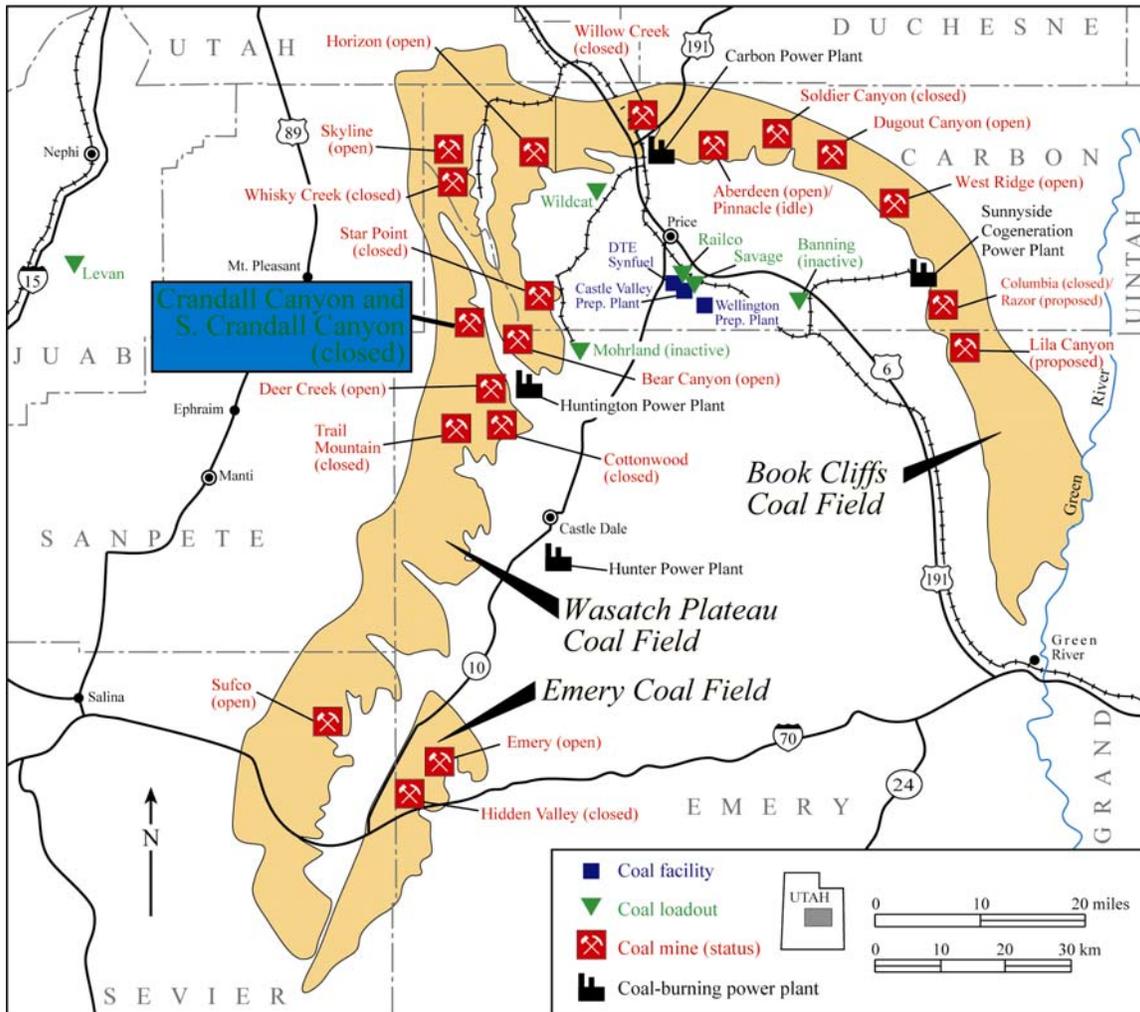
A. Coal's Place in Utah's Economy

The Utah coal industry is vital to the economies of Carbon, Emery, and Sevier Counties and to the state as a whole. In the last decade, Utah coal mines have produced roughly 25 million tons of coal each year and have directly employed an average 1750 employees. In addition, the coal industry indirectly creates thousands of auxiliary jobs, including coal haulage services and coal-fired electric power plant operations. Revenue from Utah coal sales accounts for more than 500 million dollars in Utah's annual economy.

Utah currently has nine operating coal mines, the largest being Canyon Fuel's Southern Utah Fuel Company (SUFCO) mine in the southern Wasatch Plateau, the only mine in Sevier County. The SUFCO mine produces roughly 7.5 million tons of coal per year, 30 percent of Utah's total production. Other large mines include Canyon Fuel's Dugout Canyon mine, Energy West's Deer Creek mine, and UtahAmerican Energy's West Ridge mine, each of which produces between 3.5 and 4 million tons of coal per year. Currently, about 85 percent of Utah coal goes to the electric utility market in Utah and other states. The remaining coal goes to industries such as cement manufacturers and metal producers. Nearly 40 percent of Utah's coal production is shipped to other states.

Utah currently receives the vast majority of its electricity from five coal-fired power plants located in Utah. In 2007, Utah's coal-fired plants supplied 83 percent of all electricity generated in the state. In 2005, this percentage was roughly 95 percent, but several new natural gas power plants have come online, reducing coal's overall share. Four of the five coal-fired power plants in Utah are supplied solely with Utah coal; the fifth, the Bonanza Plant in Uintah County, receives its coal from a mine just over the border in Colorado.

¹ This discussion of Utah's coal industry was prepared from information provided by the Utah Geological Survey, which publishes the Utah Coal Report, an annual review of production and distribution of Utah coal. The Commission appreciates the Geological Survey's assistance.



The largest coal-fired power plant in Utah is the Intermountain Power Agency's IPP plant near Delta, Utah. IPP consumes about 6 million tons of Utah coal each year, providing electricity to Utah and California. PacifiCorp operates three coal-fired plants, all located in the coal-mining communities of Carbon and Emery Counties. These three plants—Carbon, Hunter, and Huntington—together consume over 8 million tons of Utah coal each year. Utah's four plants together consume almost 60 percent of Utah's total coal production.

B. Outlook



Although the coal industry's place in Utah's economy is significant, its prospects beyond approximately fifty years are uncertain. As high-quality, easily-reached reserves are depleted in the Book Cliffs and Wasatch Plateau coal fields,

mining operations in those fields will encounter increasingly challenging conditions, including greater mining depths. To continue coal production in Utah, coal companies will also look to other Utah coal fields, such as the Emery and Alton fields, to meet future demand. Geologists calculate that 60 percent of Utah's remaining reserves are located in the Kaiparowits Plateau coal field, which is unavailable to mining because it is located within the Grand Staircase-Escalante National Monument.

Just as the development of new coal reserves in Utah is uncertain, the future use of coal is itself uncertain as questions of global warming and carbon mitigation receive increased attention. Emission standards remain a major undefined regulatory issue for coal combustion, and legislation and research on clean coal technology, including coal gasification and coal-to-liquid plants, are being vigorously pursued in the United States and around the world. Research also continues on possible carbon sequestration techniques, including test projects here in Utah.

Despite these hurdles, the Utah coal industry will remain vital to the communities of Carbon, Emery, and Sevier Counties and to Utah as a whole for the foreseeable future. As a source of fuel for generating electricity, coal is inexpensive, available, and abundant. For these reasons, a study by the Massachusetts Institute of Technology concluded that coal use will increase under any foreseeable scenario. Within the next few generations, it is very

unlikely that another energy source will supplant coal for base load electric power generation in Utah and surrounding states. Because coal mining will be a part of Utah's culture and economy for many years, it is imperative that the State of Utah work with all participants in the coal mining industry to assure the safety of its coal miners.

Chapter 2 - Federal Regulation of Coal Mine Safety

The Utah offices of one federal mine safety agency and two federal land management agencies play significant roles in regulating underground coal mining. The Mine Safety and Health Administration (MSHA) exercises comprehensive oversight and enforcement authority for all aspects of mine safety. The Bureau of Land Management and the U.S. Forest Service each have responsibility for certain aspects of coal mine regulation. In addition to these three agencies, the National Institute for Occupational Safety and Health, while possessing no regulatory authority, conducts significant research into coal mine safety. This chapter focuses on the roles of these agencies in Utah that are relevant to coal mining, but does not attempt to provide a full description of their national structure or responsibilities.

A. Statutory Framework

Since the end of the 19th Century, Congress has taken considerable steps to strengthen federal regulation of mine health and safety. Despite fierce opposition from mining states, Congress created the Bureau of Mines in 1910 within the Department of the Interior to enforce preliminary safety guidelines. By the end of World War II, the federal government assumed an even stronger role in mine safety and health regulation. In 1946 the Department of the Interior agreed to promulgate the Federal Mine Safety Code to resolve miners' safety concerns and end a nationwide mine strike.² The Code permanently expanded the federal government's role in mine safety regulation and inspection. Besides regulating roof control, electricity, and machinery use, the Code also mandated ventilation standards and supervision by state certified foremen and shot firers. In 1947, Congress fortified the push toward federal regulation in a joint resolution asking the Bureau of Mines to inspect coal mines and report violations of the Code to state agencies. In response to a need for mine disaster prevention,

² Unsafe working conditions contributed to an average of 1300 mine fatalities each year between 1941 and 1945.

Congress passed the Federal Coal Mine Safety Act in 1952 based on the 1946 Federal Mine Safety Code. Under the 1952 Act, federal inspectors from the Bureau of Mines could inspect mines and order mine closures in cases of imminent danger or non-compliance by mine operators.

The Federal Coal Mine Safety Act of 1952, however, did not apply to small mines and failed to recognize common accidents such as falling rocks, machinery malfunctions, and electrical accidents that contributed to the high mortality rate of miners. In response to two mine explosions in 1962 and 1963, President Kennedy formed a task force to study causes of mine fatalities and recommend changes in the law. The task force concluded that small privately-owned mines needed federal regulation and that federal inspectors should have more authority to close down mines that did not comply with the 1952 Federal Coal Mine Safety Act.

After a 1968 coal mine explosion in Farmington, West Virginia, killed 78 of the 99 workers in the mine, Congress acted in favor of stronger federal regulation of mine health and safety. In 1969, President Nixon signed the Federal Coal Mine Health and Safety Act ("Coal Act"), which created more stringent federal regulation. The Coal Act required multiple inspections a year at both surface and underground mines to enforce compliance with stricter safety and health standards. Additionally, the Coal Act gave federal mine inspectors more enforcement authority and provided for monetary penalties as well as criminal penalties for willful violations.

In 1977, Congress passed the Federal Mine Safety and Health Act ("Federal Mine Safety Act"). The Act established the Federal mine regulation system in place today. Among other regulations, the Act provided miners who reported violations with greater protection from retaliation by mine operators and managers. The Act also created mandatory miner training and mine rescue teams. Most importantly, the Act moved mine safety enforcement from the Department of the Interior to the Department of Labor and renamed the agency as the Mine Safety and Health Administration (MSHA). To increase miner participation in mine health and safety, Congress also established the Federal

Mine Safety and Health Review Commission to provide for independent review of MSHA's actions. Although the Federal Mine Safety Act provides for comprehensive and strict federal enforcement, it also allows for state enforcement programs. State mine safety laws that do not conflict with federal laws and are more stringent than the Federal Mine Safety Act are acceptable to MSHA.

Following the Sago and Aracoma mine disasters in West Virginia, in 2006, the Federal Mine Safety Act was significantly amended by the Mine Improvement and New Emergency Response Act ("the MINER Act"). The MINER Act was passed to improve the health and safety of mines and mine workers. The Act requires mine operators to improve accident preparedness by developing emergency response plans, using up-to-date technology such as two-way communication systems, and employing two rescue teams within a designated proximity from the mine. Under the MINER Act, mine operators must also report accidents to MSHA within 15 minutes of occurrence if the accident poses a threat of imminent death. Additionally, MSHA must share technology information and establish grants to promote development of new technology and future mine inspector training.

B. Mine Safety and Health Administration

MSHA has a field office in Price, Utah, that is responsible for safety and health compliance in all of Utah's coal mines. The office has two supervisors, each with a staff of eight inspectors, one electrical specialist, one diesel specialist, and one health specialist. Retirements and attrition have reduced the office's complement of experienced inspectors, and since 2006 new inspectors have been hired to reach the levels stated. These inspectors are responsible for conducting a regular quarterly inspection of all of the underground workings in each coal mine. The inspections typically last several days, with inspectors going underground several times through the quarter to complete the inspection. Mines where a significant amount of methane is liberated receive weekly special ventilation inspections. The office also investigates all serious accidents and

conducts inspections in response to complaints received from miners or their representatives. The same inspection staff that conducts the quarterly inspections is also responsible for performing these special ventilation and ad hoc spot inspections. The Price office has responsibility for assuring compliance with training requirements set forth in a mine's approved operating plans. MSHA's Educational Field Services Branch operates through the Price office to coordinate the MSHA-required 40-hour training for all miners with the Western Energy Training Center (WETC), which provides the training.



MSHA's District 9 regional office in Denver takes the lead role in review of roof control, ventilation, and other mining plans and amendments submitted by operators in the region for approval. This is where the Crandall Canyon Mine's Roof Control Plan

amendments were approved. The regional office obtains input from field inspectors, and may make a site visit in the course of reviewing a proposed plan or amendment. It may obtain further review or analysis from MSHA's national technical support staff located in Bruceton, Pennsylvania. Several persons who provided information to the Commission lamented the loss from MSHA's Denver office of specific technical expertise in ground control and mine bumps in western coal mines when its technical support functions were relocated to the national facility in Pennsylvania.

MSHA's regulations require that all mine operators have two mine rescue teams available at all times when miners are underground. Although the teams need not be located at the mine, they must be available within two hours' travel time. Compliance with the regulations can be achieved by having coverage provided by a mine's own teams, by teams from another mine or location, or a combination of the mine's own team and one from another location or mine. The

regulations specify that each mine rescue team shall consist of five members and one alternate who are fully qualified, trained, and equipped for providing emergency mine rescue service. The regulations also address mine rescue equipment as well as work experience, physical condition, and training for mine rescue team members. Rescue team members are volunteers, usually miners, who are highly motivated and willing to train throughout the year to ensure that their rescue skills and knowledge are current.³

C. National Institute for Occupational Safety and Health

The National Institute for Occupational Safety and Health (NIOSH), an agency of the Centers for Disease Control of the Department of Health and Human Services, is responsible under the Federal Mine Safety and Health Act of 1977 for research regarding miner safety and health. When Congress closed the Bureau of Mines in 1996, two of its research laboratories, at Spokane and Pittsburgh, were retained and assigned to NIOSH. Several presenters told the Commission that the closure of the U.S. Bureau of Mines has had pivotal importance in the decline of federal research on safety issues applicable to Utah's coal mines.

Although it has no regulatory or enforcement power, NIOSH is a source of technical expertise and research funds for a broad range of safety issues. As one example, NIOSH recently participated in a cooperative effort with MSHA and the West Virginia Office of Miners' Safety, Health, and Training to address the disproportionate number of fatalities attributable to coal pillar recovery. The effort resulted in technical guidelines incorporated into the roof control plans of nearly 100 mines in southern West Virginia. NIOSH has recently entered into a research agreement with one Utah coal mine for seismic monitoring and other measures aimed at reducing the risks associated with mine bounces.

³ Many of Utah's coal mines have mine rescue teams, some of which have won national awards at rescue team competitions. Every Utah mine rescue team, as well as teams from Wyoming and Colorado, offered to respond to the Crandall Canyon Mine if needed.

D. U.S. Forest Service

The U.S. Forest Service (USFS), an agency of the Department of Agriculture, is responsible for management of all surface resources in the National Forests. Because much of the area above the Crandall Canyon Mine is within the Manti-LaSal National Forest, USFS is responsible for permitting and monitoring any mining-related activities at Crandall Canyon that occur on the surface. Therefore, USFS would be responsible for permitting any mine portal, preparation plant, or other facility built on National Forest land, as well as any temporary drilling or exploration activities incidental to coal mining. USFS has no jurisdiction over mining activities beneath the surface, nor is it responsible for administering mineral rights owned by the government. USFS used emergency authority to permit the mine operator to drill boreholes into the Crandall Canyon Mine during the rescue effort.

E. Bureau of Land Management

The Bureau of Land Management (BLM), an agency of the U.S. Department of the Interior, has the same surface management responsibilities on BLM land as the Forest Service has on National Forest lands. In addition to ensuring that any coal-mining activities on the surface of BLM land comply with all federal land-use and environmental laws, the BLM also administers the mineral rights owned by the federal government, including those in National Forests. This occurs in two parts. First, the BLM makes federally-owned mineral resources such as coal available to coal operators through public lease auctions.⁴ Second, the BLM monitors coal mining operations to assure that the government will receive the maximum practical amount of royalties from the operator as it produces coal from the lease. To do this, BLM determines for each lease or other logical mining unit a “Maximum Economic Recovery,” which

⁴ The mineral leasing activities of the BLM apply almost exclusively to energy minerals. Hard-rock minerals are subject to location by private parties under the General Mining Law of 1872. The government has no ownership interest in, and receives no royalty from, hard-rock minerals mined from federal land under the 1872 law.

defines the amount of coal the operator is expected to remove and, therefore, the amount of royalties the government will be paid. BLM inspectors visit mines under federal lease each quarter to verify production and economic recovery. If mining operations change, or the operator encounters unexpected conditions, the BLM may adjust the Maximum Economic Recovery to reflect the changed circumstances.

Chapter 3 - The Role of Utah State Government in Coal Mine Safety

Although many states operate comprehensive programs that regulate coal mine safety, Utah along with a small number of other coal mining states, limits its regulation to testing coal miners and certifying their competence to perform a few certain specialized mine occupations. Many Utah state agencies play roles related to the coal industry or provide important services to the industry or its miners, but only the Utah Labor Commission's testing and certification functions can be deemed regulatory in nature. The following sections describe the roles of the Labor Commission and other state agencies related to coal mine safety.

A. State Coal Mine Inspection Before 1988

Utah does not now have a state coal mine inspector. It had a mine inspection and safety program for much of its history, beginning before Utah became a state and when mining was the primary industrial activity for many communities. From that time until approximately 1980, the Utah Legislature sustained a comprehensive state program for coal mine safety that included safety standards, procedures, and enforcement tools, with administrative authority resting first with the State Coal Mine Inspector and later with the State Industrial Commission.

As the federal government played a greater role in coal mine safety over time, the Utah Legislature reduced Utah's program. By the end of 1979, although the statutory basis for Utah's state program remained intact, the state program had only three coal mine inspectors to perform inspections and administer the miner certification program. Even this limited state program depended primarily on federal funding.

In 1987, the Utah Legislature repealed Utah's substantive state rules for coal mine safety and instead required the Industrial Commission to "adopt rules that substantially incorporate the federal safety and health standards relating to coal mining, including those promulgated under the Federal Mine Safety and

Health Act of 1977 and its amendments.” In 1988, the Legislature explicitly prohibited the Industrial Commission from exercising any authority or performing any mining inspections or enforcement of safety rules “so long as Utah’s mining operations are governed by federal regulations.”

Thus, beginning in the late 1970’s, as MSHA began to exercise its authority under federal law to regulate and enforce coal mine safety, the State of Utah reduced its involvement. As a result of this policy decision, Utah’s current involvement in underground coal mine safety is limited to two areas: 1) certifying the competence of coal mine personnel working in certain safety-related occupations, and 2) establishing and enforcing standards for certain auxiliary equipment, such as boilers and elevators.

B. Utah Labor Commission

At this time, Utah state government’s role in underground coal mine safety is limited to testing and certification of miners. The Utah Labor Commission administers the state’s miner certification program pursuant to Title 40, Chapter 2, Utah Code Annotated, “Coal Mines.” The Labor Commission is administered by Labor Commissioner Sherrie Hayashi, who serves on the Governor’s cabinet and has general supervisory authority over all the Commission’s divisions and direct authority over the Commission’s Administrative Services.

The Boiler and Elevator Safety Division under Division Director Pete Hackford is responsible for miner testing and certification. Although the Safety Division’s mission is to ensure public and employee safety by inspecting boilers, pressure vessels, and elevators, the Division also administers the Mines and Mining Program from its satellite office in Price. The Price office is staffed on a half-time basis and funded in part by MSHA funds and fees charged for certification examinations. A Miner Certification Panel comprised of individuals with experience in the coal mining industry provides oversight of the program. The office administers tests and issues certificates for underground mine electricians, surface mine electricians, fire bosses, underground mine foremen, and surface mine foremen.

The Labor Commission has identified three objectives for its certification program: (1) To ensure that miners take safety training seriously; (2) To ensure that miners have acquired the knowledge and skills to perform their work safely; and (3) To foster a culture of safety based on the emphasis that the state and the industry place on safety.

Limited staffing and uneven funding have put the Labor Commission in the position of implementing only a modest certification program compared to its counterparts in other states. For example, unlike some other states, Utah does not require certification of new miners. Other areas where the program could be stronger include the range of positions tested and certified, the requirements for recertification, resources to address language barrier issues, and representation on the Miner Certification Panel. More stable funding would enable the Labor Commission to address these issues and work with the Western Energy Training Center to improve the development of miner safety training and its coordination with testing and certification.

C. Division of Oil, Gas and Mining

The Division of Oil, Gas and Mining (OGM) has no direct statutory responsibility for mine worker safety. Its statutory responsibility addresses issues on the surface of the mine regarding the environment and public health and safety relating to mining activity. OGM is one of seven divisions within the Utah Department of Natural Resources (DNR). Michael Styler is the Executive Director of DNR.

The Division Director of OGM is John R. Baza. OGM has four program responsibilities: Oil and Gas, Coal, Minerals (i.e. non-coal or hard-rock mining), and Abandoned Mine Reclamation.

The Utah Coal Program is similar to that of agencies in other states that derive their regulatory duties from the Surface Mining Control and Reclamation Act ("SMCRA"), enacted by Congress in 1977. SMCRA permits any state to assume primary responsibility for regulating the environmental effects of coal mining by adopting regulations at least as stringent as those in SMCRA. While

Utah has assumed primacy under SMCRA, the Coal Program's decisions are under federal oversight, and the program relies greatly on federal funding through the Interior Department's Office of Surface Mining.

Coal mine worker safety is not a regulatory responsibility of OGM's Coal Program. However, OGM interacts with the coal mine operators in Utah more than any other state agency. OGM's Coal Program addresses the surface effects of coal mining in Utah, and the OGM staff members are well acquainted with the coal mine operators, the mine managers, and the extent of coal mining operations in Utah.

All other non-coal mineral mining in Utah falls within the responsibility of OGM's Minerals Program that derives authority from the Utah Mined Land Reclamation Act. Although OGM's duties in this area are similar to its responsibilities under the Coal Program, it is a state-run program and does not have the prescriptive requirements of federal oversight. Like the Coal Program, it has no regulatory responsibility for miner safety.

There is currently no requirement that OGM (or any state agency) be notified in the event of a worker accident at a Utah coal mine. OGM does not communicate routinely with MSHA, nor does it coordinate with mine safety inspections, enforcement, rescue operations, or accident investigation. OGM must be notified of mining accidents affecting the environment or public safety, such as water production from a mine, surface subsidence, or surface disturbing activities. In Utah, underground coal mine operations and worker safety are completely regulated by MSHA.

D. Utah Geological Survey

The Utah Geological Survey, a division of the Utah Department of Natural Resources, is an information and research agency that has no regulatory authority, but provides scientific information about Utah's geologic environment, resources, and hazards. Among its coal-related functions, it compiles statistics on coal production, distribution, and reserves; publishes the Annual Utah Coal Report; and prepares a yearly economic summary and outlook for the Governor.

The Geological Survey also maintains a digital database of abandoned coal-mine maps created with funding from MSHA.

E. School and Institutional Trust Lands Administration

The Utah School and Institutional Trust Lands Administration (SITLA) has no regulatory responsibility for coal mine safety. SITLA is the trustee for other state entities, usually schools, which own mineral rights, including coal deposits. SITLA acts in a fiduciary capacity to lease these rights to coal operators, who pay a royalty through SITLA to the school or other beneficiary from coal produced. Unlike the BLM, which determines maximum economic recovery when leasing federal coal and conducts verification inspections, SITLA does not engage in its own determinations of economic recovery, does not go underground to verify production, and does not review or approve a mine's operation plans that affect the amount of coal recovered. Because, as a practical matter, any SITLA lease will be adjacent to federal leases and covered in the same mine operator's plans, SITLA has chosen to contract with the BLM (or in some cases, a consultant) to determine economic recovery targets and verify production. The Crandall Canyon Mine encompassed coal leases from both SITLA and the BLM. Most of the coal contained in the South Barrier pillar where the accidents occurred was within a SITLA lease.

F. State Education and Training

A consistent theme from the Commission's hearings was that the coal mining workforce at all levels is growing older at the same time that the pool of potential new workers is shrinking. Mine operators and community leaders expressed to the Commission their concern that these workers will not be replaced when they leave the workforce, and, if they are, the resulting corps of coal mine workers will be less experienced and more prone to mistakes, with potentially disastrous consequences. The Commission believes that the State of Utah should act swiftly to help ensure that a fully trained workforce of mining engineers, technicians, and miners is available to meet the future needs of the

coal industry in Utah. The Western Energy Training Center in Helper, Utah, and the College of Mines and Earth Sciences at the University of Utah are the key educational institutions in Utah to meet these needs.

1. Western Energy Training Center

The Western Energy Training Center (WETC) was created from a grant that the College of Eastern Utah received from the U.S. Department of Labor's Employment and Training Administration. WETC's mission is to provide broad-based industry training as well as industry specific training in coal, oil and gas, electrical generation, transportation, and related services. WETC is an innovative training facility that addresses the long-term needs of workforce development in the energy industries. Located at the former Willow Creek Mine site north of Helper, Utah, the Center offers a wide array of short-term intensive training by industry experts as well as programs in areas such as Safety, Process Technology, and Workforce Readiness. WETC Board members consist of key figures from local energy industries, together with representatives from the College of Eastern Utah (CEU), Southeast Applied Technology College (SEATC), Workforce Services, and Vocational Rehabilitation Services. For several decades prior to WETC's creation, CEU and SEATC performed the miner training functions now assigned to WETC.

WETC's objective is to provide energy industry training for workers at all levels, including basic job skills to enable new workers to qualify for entry-level positions, technical skills training to support advancement to higher-paying scientific and technical occupations, and college preparatory and management skills. The Center also provides the federally-mandated new miner training, and offers safety and rescue training for mine workers and operators. Many people who provided information to the Commission noted that WETC is strategically situated to be a particularly effective training resource for the coal industry because it is close to all of Utah's coal mines.

WETC is also the focal point for training mine rescue teams in Utah.⁵ Training is a vital part of any mine rescue program. Current federal regulations require forty hours of training annually for rescue team members.⁶ Teams could train at WETC throughout the year, and may also receive specialized training at underground training facilities such as the Edgar Mine in Colorado and the Beckley West Virginia Training Technology Facility. These facilities enable teams to receive hands-on training in coal mine firefighting skills.

2. College of Mines and Earth Sciences

The College of Mines and Earth Sciences at the University of Utah was established in 1901 as the “State School of Mines.” It has a statutory mandate to provide instruction in mining, metallurgy, and “other branches of engineering that pertain to mining.” Utah Code Ann. § 53B-17-401(3). The College is the designated beneficiary of any land grants or appropriations from the federal government earmarked for a state school of mines. Today, approximately one-half of the faculty specialize in earth sciences (geology, geophysics, and meteorology), while the balance specialize in minerals and material-related engineering, most specifically geological, metallurgical, and mining engineering. The college's varied resources have also expanded to include such facilities as the University of Utah Seismograph Station⁷ (UUSS) and the Central Receiving Center for Remote Earthquake Sensing. UUSS is a research, educational, and public-service entity within the University's Department of Geology and Geophysics. Under the direction of Professor Walter Arabasz, it operates a regional and urban seismic network of more than 200 stations serving the populations of Utah, eastern Idaho, and western Wyoming.

⁵ Mine rescue contests play an important role in assuring readiness by providing an opportunity for a full-equipment drill in the context of a competition. Two major underground coal mine rescue contests are held in the western U.S. One is held in Price, Utah facilitated through the Southeast Applied Technology College and the other is held alternately at Paonia or Craig, Colorado.

⁶ MSHA has proposed rules that would increase this annual requirement to 64 hours.

⁷ The University of Utah Seismograph Station was the first agency of state government to become aware of the Crandall Canyon accident on the morning of August 6, when an automated paging system alerted its director, Professor Walter Arabasz, that a seismic event had occurred in the area. In accordance with the Station's established policy, Professor Arabasz immediately contacted local authorities.

An enrollment increase in the Mining Engineering Department at the University of Utah is essential to fill the demand for graduates in this field and to provide the technical manpower required by existing Utah mine operators. The University of Utah is one of twelve accredited schools in the nation providing Bachelor of Science and graduate degrees in mining engineering. Recent statistics show only about 100 engineers at the Bachelor's level are being produced nation-wide to fill approximately 300 or more open positions. The number of Ph.D graduates, capable of replacing retiring faculty in the nation's mining schools, is also grossly inadequate. The University of Utah faculty of five mining engineers is one less than the recommended complement for the Department, and an additional professor would augment the Department's recruiting and teaching capabilities as well as provide new safety research. Faculty candidates with expertise in ground control and mine seismicity would be encouraged to apply. Although previously bypassed for significant help in the Utah Engineering Initiative, the current shortage and expected long-term demand for students, coupled with the engineer's pivotal role in safe mine design, is a strong argument for specifically identifying mining engineering as a participant in the Engineering Initiative.

G. Department of Public Safety

The Utah Department of Public Safety has no formal first-responder role in the governmental response to a mine accident or emergency. The Department's Division of Homeland Security regards coal mine accidents as an industrial accident, with primary responsibility vested in the agency that regulates the industry, and in local law enforcement for public safety concerns. The Division would respond to a coal mine accident if public safety were implicated, and then only if its authority were triggered in one of two ways: the Governor may declare a public emergency, or local law enforcement or emergency response entities may request state assistance. In the Crandall Canyon Mine accident, neither of these triggers was activated. The Governor did not declare a public safety emergency, nor did local authorities request state intervention in emergency

response to the mine accident. MSHA, the mine operator, and local law enforcement authorities managed the logistics of emergency response.

When state emergency authority is triggered, state policy calls for use of the Incident Management model developed by the federal government. Important features of the Incident Management process are: 1) establishment of an incident-specific Joint Information Center to gather together and disseminate all information related to a specific incident; and 2) creation of a clearly defined single point of contact for state government for coordination and management of information and resources.

The state's public safety and emergency planning resources are available to assist MSHA, local law enforcement, and the coal operator in addressing a mine accident. In addition, the Division of Homeland Security and other



appropriate state agencies are potentially valuable partners in formulating emergency response coordination plans and communication protocols. The state could also help facilitate simulation exercises along with community officials to define roles and prepare for the most effective response to a mine disaster. These plans, partnerships, and simulations had not been fully developed or implemented in advance of the Crandall Canyon Mine disaster.

Chapter 4 - Regulation of Coal Mine Safety in Other States

There are eighteen coal mining states in the United States. In addition to the regulation and oversight exercised by MSHA, each state takes its own approach to regulating mine operations and miner safety. State government's involvement in coal mine safety can include sponsorship of training programs, testing and certification of persons in various mining occupations, licensing of coal mine operators, review and approval of various types of mining plans, promulgation and enforcement of safety regulations, and inspection of mines. Only a few coal mining states engage in all of these functions, and some functions are carried out in cooperation with MSHA, often with federal funding. Because Congress intended that the federal mine safety program should be the primary means of safety regulation for America's mines, state regulation operates in addition to, rather than in place of, the federal program.⁸

Although various presenters who appeared before the Commission referred to the regulatory regimes of other coal mining states, no comprehensive survey was available to help put Utah's program into a national perspective, or to glean ideas for improving Utah's program from other state's efforts. Law students associated with the Pro Bono Initiative at the S.J. Quinney College of Law, University of Utah volunteered their time to research state law and interview state regulators to assist the Commission to understand approaches to mine safety regulation in twelve other states. The survey covers twelve states, other than Utah, including all Western states with underground coal mines, and omitting some Eastern states with insignificant coal production, even though that production came from underground mines. The survey did not include regulation of non-coal mines or surface coal mines. The students' research is confirmed and supplemented by a similar survey conducted by the Utah Labor Commission.

⁸ This is in contrast to regulation of the environmental effects of coal mining under the Surface Mine Control and Regulation Act of 1977 (SMCRA). Under that federal program, a state can assume "primacy" of regulation by adopting a regulatory program that is no less stringent than the federal regulations. Utah administers its own coal mine permitting and reclamation program in place of a federal program under this statutory scheme.

The Utah Mine Safety Commission appreciates the contribution of both of these organizations and the patience and cooperation of state mine safety officials throughout the country.

This survey of state coal mine safety programs shows that there is a broad spectrum of state regulatory involvement in the safety of underground coal mines. The amount of coal mining occurring in a state, whether measured by coal production, number of mines, or number of hours worked, also varies widely. The Commonwealth of West Virginia operates its program at the higher end of this spectrum. Its Office of Miners' Health Safety and Training administers an extensive system of mine safety regulation, including a complete set of mine safety regulations and a large staff of mine inspectors. The West Virginia program is the largest and most comprehensive of the state coal mine safety programs. It functioned for many decades before the federal system was created. Kentucky also administers a comprehensive system of state safety regulation that includes annual licensing of coal mine operators and that requires operators to submit roof control, ventilation, and other mine plans to the state Office of Mine Safety and Licensing for approval in addition to federal review and approval.

If West Virginia and Kentucky occupy the higher end of the spectrum of state regulatory involvement, then Utah and Colorado occupy the lower end.⁹ In both of these states, the state's role is limited to testing and certification of certain mining occupations. Both states receive grants from MSHA to offset the cost of providing the federally-required training for new miners. Neither state has any state mine inspectors, mine safety regulations, or other oversight or enforcement functions.

⁹ Although not included in the survey because their coal industries are relatively small, Arkansas, Maryland, Oklahoma, and Tennessee are also among the states that limit their mine-safety roles to testing and certification.

A. Mine Inspections

The inspection of mines to enforce health and safety regulations is the most prominent feature of government safety and health regulation. Of the twelve coal mining states researched, only one (other than Utah) does not have at least a limited state inspection system. In the states that perform inspections, the frequency of scheduled inspections varies from monthly to semiannually. There is also variation in the degree of enforcement power exercised, from merely issuing advisory or warning citations to imposing stop work orders, closures, fines, or criminal penalties. Some states choose to apply MSHA's safety and health standards, while others inspect according to state rules or statutes.

New Mexico and Montana each employ a single state mine inspector, who acts in a mostly advisory capacity to support mine operators' compliance with federal safety and health standards. Both states' inspectors are empowered to cease operations in a section, or the entire mine, if they detect a serious hazard. Wyoming has a staff of six mine inspectors, but only one works with the state's only underground coal mine. In addition to using the federal rules as safety and health standards, Wyoming's state program is authorized to promulgate its own safety and health rules so long as they are not more stringent than federal standards. Montana uses only the federal safety and health rules to issue "warning" citations intended to assist the operator with federal compliance. In 2006, New Mexico repealed all of its state safety statutes, also opting to rely only on federal safety and health standards.

At the other end of the spectrum, West Virginia, Kentucky, Virginia, Pennsylvania, Ohio, and Illinois employ a large complement of inspectors that enforce state safety and health standards. Responding to recent accidents and a threat of litigation, Alabama recently expanded its force of mine inspectors and now operates a comprehensive inspection system enforcing state statutes and regulations. Five of these states levy fines for violations; all seven empower inspectors to issue a closure order for seriously unsafe conditions.

Indiana recently overhauled its program to eliminate its “outdated” code of state mine safety regulations. The state still conducts scheduled inspections, and may issue closure orders if warranted, but does not levy fines. A significant part of its overhaul included a new drug-testing requirement for underground coal mine workers.

Most states that require state inspections perform them on a quarterly schedule. Alabama requires inspections every 45 days, and Illinois requires monthly inspections. Kentucky, which recently revamped its regulatory program, will increase inspection frequency from three per year to six beginning in 2009, including two full electrical inspections. New Mexico’s state inspector usually only visits the state’s one underground coal mine if requested, or if an accident has occurred. Wyoming requires underground mine inspections every six months.

Virginia employs an innovative risk assessment procedure to identify those mines where additional inspections might enhance accident prevention. Virginia state law requires inspections of every underground coal mine at least once every 180 days. In addition, the state determines the relative risk level of the mines in the state and adds additional inspections to the higher-risk mines. Virginia may also spot-check mines and performs inspections on recently licensed mines, recently reopened mines, and in response to allegations of smoking in an underground mine. Upon finding a violation, the inspector may issue a notice requiring corrective action or close the mine or section until the violation is abated. No fines are assessed.

B. Training and Certification

There are three types of training involved in compliance with federal or state safety standards for underground coal mines. First, all new miners must receive 40 hours of training to meet federal requirements. Compliance with this federal requirement involves no examination or certification, only proof that the miner has attended the required hours of instruction and has thereafter received annual refresher training. Second, all coal mining states require examination and

certification of certain underground occupations with greater responsibility for safety. Third, many mining plans approved by MSHA call for periodic training of workers in safe methods of operation. When such a requirement is included in a plan, compliance is a condition of the plan's approval, and failure to comply is a violation of federal health and safety rules.

States augment the federally-required new miner training by enhancing the curriculum through additional hours or examination, or by adding a certification requirement linked to further training and a trainee period, or both. West Virginia, for example, requires 80 hours of new miner training. Five states (West Virginia, Virginia, Indiana, Kentucky, and Pennsylvania) require a certificate of competency to work as a miner, with required trainee periods ranging from 45 days to one year.

Most states require certification for some number of responsible underground occupations, such as electricians, foremen, or fire bosses.¹⁰ West Virginia and Virginia both issue more than 30 different certificates requiring examinations and verified experience. Kentucky also has an extensive list of competency certificates. Illinois certifies nine positions, including a coal mine medical technician, which is required at every mine with greater than 30 miners. Indiana, New Mexico, and Colorado, like Utah, require certificates for five underground occupations. Most states have a reciprocity policy to recognize certificates issued by other states. A few states' certificates are valid indefinitely, but most, including Utah's, require recertification after a period of absence from the coal mining industry.

Every coal mining state receives money in an MSHA grant to provide the required 40-hour new miner orientation training. Some states, such as West Virginia, also conduct substantial state training programs. Pennsylvania has recently invested \$2 million in technology upgrades to its state-owned mine

¹⁰ The fire boss is responsible for conducting a pre-shift inspection of the mine for hazardous conditions, to test for methane and oxygen deficiency, and to determine if ventilation air is moving in its proper direction at key locations defined by federal regulation. In some states the mine foreman or mine examiner has this responsibility.

safety training facility, where the United Mine Workers of America, as a contract training provider, offers a broad training curriculum.

C. Mine Rescue and Emergency Response

Most states have emergency response plans and preparations in place. Responding to recent mine accidents, Indiana and New Mexico have initiated statewide emergency response planning exercises, including state and local authorities and mine operators. New Mexico's State Mine Inspector reports that the mine operators have enthusiastically supported the planning process. New Mexico has already completed a "tabletop" emergency response exercise and will conduct its first full-scale emergency response drill in the summer of 2008.

Kentucky and Ohio have both assembled critical mine rescue equipment in rescue stations located near mining areas. Ohio maintains and stocks four separate rescue stations. Each station has six rescue crew members that receive training each month. Ohio law specifies that each station must have a truck to carry the needed equipment, six breathing apparatus, an oxygen cylinder recharger, a resuscitating outfit, carbon monoxide detectors, at least ten mine safety cap lamps, and EMT materials. Ohio has also equipped a truck to clean and recharge breathing apparatus used by rescue teams, and mines provide the necessary staging area and electrical connections to make the truck operational immediately upon arrival.

Ohio also requires some mines to provide a certified EMT underground during certain shifts. Because the training and certification for standard EMTs provides some skills that are unnecessary in a mine situation and fails to provide other skills that are needed, Ohio is considering a special "Mine EMT" training and designation, patterned after similar programs in West Virginia, Illinois, and Kentucky.

D. Mining Plan Review and Approval

Most states with extensive inspection programs also require operators to submit various mining plans and amendments to the state agency for review and

approval. Although this may duplicate review and approval of similar plans by MSHA, most states indicated some degree of coordination with MSHA, and usually defer to MSHA's technical experts on particularly complex matters. Virginia operates its plan approval process in conjunction with MSHA, with the same plan submitted to both agencies, which both sign the same document when it is approved. In the event of a conflict, the operator would be required to satisfy both agencies, but until now, state-federal conflicts have been resolved through informal discussions leading to a consensus. Kentucky requires operators to submit state plans in addition to their federal plans, but is reportedly pursuing a simultaneous approval process similar to Virginia's. Pennsylvania's newly-reorganized Deep Mine Safety division includes an engineering staff to review plans and consult with operators on technical safety issues. Wyoming's state mine inspector reports that while his office reviews the plans that operators submit to MSHA, any concerns from that review are resolved by communication with the operator, or expressed to MSHA for its consideration.

E. Safety Technology

Several states have adopted requirements for coal mine safety technology that supplement MSHA rules. West Virginia has been most active, implementing requirements for wireless communications, tracking devices, supplemental caches of breathing apparatus (self-contained self-rescuers, or SCSRs), and in-mine refuge chambers. A few states also support technical advisory groups or task forces to make recommendations regarding safety technology. Utah's operators reported to the Commission that they are engaged in implementing the MINER Act requirements, but are concerned about whether compliant technology will be available, especially in the area of wireless two-way communications for Utah's deep coal mines.

Each of the single underground coal mines in New Mexico and Wyoming has implemented a miner tracking system. The tracking system at the San Juan Mine, New Mexico's only underground coal mine, uses a "transmitter puck" affixed in the miner's helmet. As the miner moves through the mine, the puck

registers with proximity tracking stations that are placed approximately every hundred yards and records how deep miners have journeyed into the mine. This technology reports to the surface the position of miners and the times they are located at those positions. In Wyoming, the operator of the Jim Bridger Mine has implemented a proximity card reader system (similar to the system in New Mexico) which tracks miners and sends the information above ground each time they pass a reader. Utah's SUFCO mine plans to implement this type of system to track miners through "zones" of the mine.

Anticipating the 2006 MINER Act requirements, Illinois requires that each miner must carry an emergency communication device and emergency tracking device at all times. Other states are adopting a wait-and-see posture, observing the technical progress of these systems under the MINER Act. Ohio is considering legislation that would require use of the best available technology, currently carbon monoxide detectors, for fire detection.

West Virginia, Kentucky, and Illinois each have a permanent Mine Safety Technology Task Force that evaluates promising technology and makes recommendations for state implementation or further research. Illinois, Kentucky, and New Mexico have permanent relationships with mining educational institutions in their states to promote safety innovation.

West Virginia's state safety technology requirements are the most advanced and comprehensive, and exceed federal standards. West Virginia requires each person working in an underground mine to wear an approved wireless emergency communication device. The communication device must be able to receive emergency communications from the surface at any location throughout the mine. Mine operators are responsible for training miners on how to use communication devices and must provide annual refresher courses. Any person working underground must also wear an emergency tracking device capable of providing real-time monitoring at the surface of their location underground. In addition to the self-contained self rescuer (SCSR) issued to each worker underground, mine operators must provide caches of SCSRs in various locations in the mine that are marked by battery powered strobe lights.

The Office of Miner Safety, Health, and Training must approve a SCSR cache plan for each mine. West Virginia also requires an emergency shelter or refuge chamber within 1,000 feet of the working face in each working section of the mine. Each emergency shelter must provide at least forty-eight hours of breathable air and must meet several other specifications required under West Virginia law.¹¹

F. State Safety Ombudsman

Of the states examined, Illinois, Virginia, West Virginia, and Wyoming have an ombudsman system in place. Illinois has vested in its Mining Board the authority to suspend mine operations if anyone in a supervisory position alerts them of a potential safety issue. Virginia has an ombudsman system in place to allow mine workers to report potential safety problems via telephone, writing, email, or in person. All complaints are investigated by the Department, which safeguards the person's identity. West Virginia has a hotline telephone number for reporting safety concerns, with statutory whistleblower protection that forbids discrimination against "any miner" for reporting mine safety violations, testifying in a proceeding resulting from a reported violation, or instituting legal action for a violation. Wyoming also has a five-person Safety Council, including the State Mine Inspector, mine operators, and mine workers, that reviews operations and potential problems in the mines. Miners or other concerned citizens may bring their concerns to this council, anonymously if they wish, for hearing and action.

* * *

The foregoing information is a useful resource to evaluate and compare various state programs. Additional analysis would be helpful. For example, Commission member David Litvin, President of the Utah Mining Association, provided state mine accident statistics collected by MSHA and compiled by the National Mining Association suggesting that mine accident reportable incident rates have been higher in states with state inspection programs than in states

¹¹ Operators at Utah's Deer Creek, SUFCO, Dugout Canyon, and Skyline Mines indicate that similar refuge chambers are on order for delivery in the first quarter of 2008.

without state inspection. However, the opposite was true for the first half of 2007. The incident rates for Utah have increased in recent years, even without counting Crandall Canyon. It also was pointed out that the inspection states often include a higher percentage of small, under-capitalized mines that may be more prone to accidents. Also, the statistics aggregated very serious (fatalities) with less serious (injuries without time off) incidents without indicating state-to-state differences within the composite incident rates. The presence of state inspection programs may themselves contribute to better reporting. Finally, there are few non-inspection states. Because mining conditions are different in every state, and because the variables contributing to mine accident incidence are complex and also differ from state to state and mine to mine, additional statistical analysis and other assessment of state programs would be helpful.

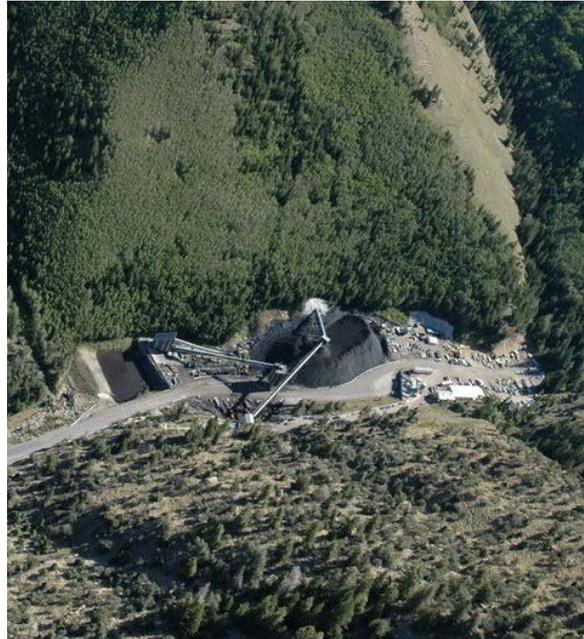
Table 1. Summary of State Regulatory Programs

State (# of underground coal mines)	Home Agency	Inspection Frequency	Enforcement Methods	Source of Standards	State Mining Plan Review	New Miner Certification & Training Period
Alabama (9)	Industrial Relations	45 Days	Fines, Citations, Stop Work	State	Yes	None
Colorado (7)	Natural Resources	None	N/A	N/A	No	None
Illinois (15)	Natural Resources	Monthly	Stop Work	State Federal	Yes	None
Indiana (7)	Labor	Monthly	Citations, Stop Work	Federal	No	6 Months
Kentucky (227)	Natural Resources	3 times per year Bi-monthly after 2008	Fines, Citations, Stop Work, License Suspension	State	Yes	45 Days
New Mexico (1)	New Mexico Tech	Ad hoc	Stop Work	Federal	No	None
Montana (1)	Labor	Quarterly	Citations Stop Work	State	Yes	None
Ohio (11)	Natural Resources	Quarterly	Citations, Stop Work	State	Yes	None
Pennsylvania (54)	Environmental Protection	Quarterly	Citations, Stop Work	State	Yes	1 Year
Utah (13)	Labor	None	N/A	N/A	No	None
Virginia (76)	Mines, Minerals & Energy	6 Months + Risk Based Spot Inspections	Citations, Stop Work	State	Yes	1 Year
West Virginia (174)	Commerce	Quarterly	Fines, Citations, Stop Work	State	Yes	6 Months
Wyoming (1)	Employment	Quarterly	Fines, Citations, Stop Work	State or Federal	Yes	None

Chapter 5 - The Crandall Canyon Mine Accidents

A. Mine History, Ownership, and Operations¹²

The Crandall Canyon Mine occupies a permit area of 6287 acres in the Manti-LaSal National Forest on the eastern edge of the Wasatch Plateau Coal Field. The entire mine lies within the boundaries of Emery County. The mineral rights are a composite of private property, federal leases, and state school trust lands leases. The mine's portal and surface facilities are located in Crandall Canyon about one mile west of its junction with Huntington Canyon, and about 15 miles west of Huntington, Utah.



The mine accesses the Hiawatha Coal Seam at its outcrop via drift entries driven generally west beneath the Wasatch Plateau. Operations began in 1939 using room-and-pillar methods and continued until 1955. Genwal Coal Company reactivated the mine in 1983 and produced from 100,000 to 230,000 tons of coal per year. Intermountain Power Agency (IPA) acquired a fifty percent interest in the mine's assets in 1990. Installation of continuous haulage permitted an increase in production to 1 to 1.5 million tons per year. In 1995, control of the mine was transferred to Genwal Resources, Inc., with mine assets jointly owned by IPA and Andalex Resources, Inc. Installation of longwall mining led to increases in production to 2 million, and then to 3.5 million tons per year.

¹² The information in this chapter is obtained from publicly available sources, including the public files of the Division of Oil, Gas and Mining, and MSHA's single-source page for the Crandall Canyon Mine at <http://www.msha.gov/Genwal/CrandallCanyon.asp>. The Utah Mine Safety Commission was not asked to perform an independent investigation of the circumstances of the accidents, nor of the operator's actions prior to the accidents.

UtahAmerican Energy, Inc. (UEI), a wholly-owned subsidiary of Murray Energy Corporation of Cleveland, Ohio, became the owner of Genwal Resources, and a fifty-percent owner of the mine's assets, when it purchased Andalex in 2006 and assumed operation of the mine. By that time, longwall operations had ceased, but the mine produced about 600,000 tons of coal per year from continuous miner operations pulling pillars in the south submains area.

From the mine's portal on the north side of Crandall Canyon the main entries run about 3000 feet north, then due west about 22,000 feet to the furthest extent of the workings near the Joe's Valley Fault. These long east-west entries provide access to all parts of the mine, and are called the West Mains. Three sets of submain entries run north from the West Mains to access room and pillar and longwall sections already mined out. A set of submain entries to the south also accesses a combination of room and pillar and longwall sections. These sections were also completely mined, as were the pillars in the south submains together with portions of the adjacent barrier pillars. Much of the mine's workings are beneath 1000 to 1500 feet of cover, with a maximum depth exceeding 2000 feet near the east-west midpoint of the main west entries and barrier pillars.

As longwall mining occurred, coal was left between the main entries and the adjacent mined-out longwall panels on both sides of the westernmost 5000 feet of the West Mains. These remaining blocks of coal, approximately 500 feet wide, are barrier pillars¹³ intended to isolate the main entries from roof pressures resulting from removal of the coal in the adjacent longwall panels. Once longwall mining in this portion of the mine was complete, the main entries were no longer needed. The mine elected not to pull any of the pillars separating these entries because of poor roof conditions, and the entries were sealed off from the mine.¹⁴

B. Inspection and Citation History

In each of the two years immediately preceding the accidents in August 2007, the Crandall Canyon Mine was cited for approximately eighty violations of

¹³ "Pillars" are blocks of coal left in place, either permanently or temporarily, to support the roof.

¹⁴ The five parallel entries making up the West Mains are separated by four rows of pillars.

health and safety standards. MSHA reports that this amount is lower than the national average for underground bituminous coal mines. The mine's rates of injuries and fatalities had also been below the national average in each of the ten years preceding the accidents.

MSHA has conducted 18 regular inspections and seven spot inspections at the mine since the beginning of 2004. In 2007, MSHA had completed two regular inspections, with a third initiated but not completed as of August 6. One special inspection in February 2007, initiated by a miner's complaint, resulted in a corrective order for failure to have two rescue teams readily available. A spot inspection in April of 2007 did not result in citations or orders. On May 22, 2007, personnel from the Denver Regional Office of MSHA visited the working section in the South Barrier pillar for a technical investigation of roof control in light of a serious bump in the North Barrier section, which will be discussed more fully below. No citations or orders were issued, and no report of that visit is available.

C. Operations Prior to the Accidents

Shortly after it assumed operation of the mine, UEI submitted a plan for MSHA approval to recover coal contained in the barrier pillar on the north side of the West Mains. The plan called for four entries on approximately 80-foot centers, with crosscuts at 90-foot intervals. The development would result in a 130-foot-wide solid barrier pillar (the "remnant" barrier pillar) which would remain after mining adjacent to the longwall gob,¹⁵ a 55-foot-thick barrier adjacent to the West Mains, also to remain, and three rows of pillars, two rows of which would be extracted if conditions permitted. The third row of pillars, adjacent to the remnant barrier pillar, would remain to protect the bleeder entry.

A detailed report from Agapito Associates, mining engineering consultants retained by UEI, supported the initial proposal. The report analyzed the stability of the proposed workings and concluded that the planned development could

¹⁵ "Gob" is that part of the mine from which the coal has been removed and the space has more or less filled up with waste. Respectively "inby" and "outby" are directions of travel in the mine away from or towards the mine portals. "Bleeders" are entries maintained as air courses to allow flammable or otherwise hazardous gases from the mined-out areas to flow into the mine ventilation system and out of the mine, helping to prevent explosions and fires. "Ribs" are a tunnel's walls.

avoid the majority of stresses transferred from adjacent mined-out longwall panels, and that coal extraction from the pillars could therefore proceed. MSHA approved the plan in November of 2006, as well as a subsequent plan, based on the same report, to recover the coal remaining in two of the three rows of pillars. Because crews had finished pulling pillars in the South Mains area the previous month, this was the only working section in the mine.

Pillar extraction began at the west end and continued outby until the operator, responding to “poor roof conditions” under about 2100 feet of cover, chose to suspend the retreat mining at crosscut 138, resuming in early March 2007 by pulling the pillars between crosscuts 135 and 134. On March 10, shortly after resuming pillar extraction, a bump occurred that spewed large amounts of coal off the ribs into the entry ways, and forced work on the section to cease. Although the bump or bumps apparently occurred “off shift” and no one was injured, it resulted in rib bursts that heavily damaged the entries between crosscuts 133 and 139, a distance of about 800 feet, and damaged or destroyed stoppings along the bleeder entry from crosscut 132 inby to crosscut 149. The operator at that point abandoned mining in the North Barrier pillar, and the entries into the area were sealed on March 27, 2007.¹⁶

While pillar extraction in the North Barrier was continuing under the approved plan amendments, UEI submitted identical amendments for development and pillar extraction in the South Barrier pillar. Following the bump in the North Barrier pillar, UEI asked Agapito to re-evaluate the pillar development and extraction plans for the South Barrier pillar. Agapito responded that, in its view, the plan could safely proceed, but recommended that crosscut spacing be increased from 90 to 130 feet. Agapito further recommended that every effort should be made to avoid skipping pillars during the retreat process in the South Barrier, believing that stresses from the newly initiated cave outby the skipped pillars contributed to a “localized bump” that propagated over a wider area in the North Barrier.

¹⁶ Although press reports indicate that the operator did not report the March 10 bump to MSHA, it is clear that MSHA was aware of the bump and considered it when it subsequently approved roof control plans for the South Barrier pillar.

MSHA approved a roof control plan amendment for development mining in the South Barrier on March 8, 2007, and a similar amendment for pillar extraction on June 15, 2007 following a site visit to the section in May by two MSHA District 9 technical personnel. The plan called for extraction of two rows of pillars, and removal of a forty-foot slab from the remnant pillar. Despite Agapito's recommendation to avoid skipping pillars, the map submitted with the plan called for skipping three ranks of pillars between crosscuts 142 and 139. Pillar recovery operations had begun under this plan and had proceeded to the area of crosscut 140 when the massive mine bump occurred on August 6.

D. Bureau of Land Management Actions at Crandall Canyon

In the course of verifying that the operator was achieving Maximum Economic Recovery of coal under federal lease, the BLM conducted periodic inspections of the underground working sections at the Crandall Canyon Mine. At the time that the Main West entries were sealed in 2005, a BLM inspector visited the section, observed the deteriorating state of the coal pillars, surmised that the area was taking unacceptable weight, and concurred with the operator that attempting further mining in the area by pulling the pillars would be unsafe. In 2006, the BLM inspector observed that pillar removal in the south mains was proceeding without difficulty. On March 15, 2007, following the bounce that halted retreat mining in the North Barrier, a BLM inspector approved leaving the remaining pillars in place after observing the area where the bounce occurred and concurred in the operator's judgment that continued pillar extraction on the North Barrier was too risky. The BLM inspector also approved transferring the operations to the South Barrier pillar. The inspector's report notes that the operator said it was working on a new roof control plan amendment for the South Barrier, but was unsure whether that plan would call for pillar retreat mining. Ultimately, the operator submitted plans for development and retreat mining on the South Barrier that were identical to those approved on the North Barrier.

The BLM inspector's reports make it clear that the hazards of increasing roof pressure and deteriorating pillars were apparent throughout the West Mains

and its adjacent barrier pillars. Even before the March bump, BLM's inspector was concerned about pulling pillars out of the North Barrier leaving only narrow remnant pillars on either side to protect the operation. He also believed, accurately, that ground control would become increasingly difficult as pillar extraction reached the deepest cover. BLM advised the Commission that while its inspector noted a need for vigilance and caution in the continuing mining operations, he did not conclude that there was cause for alarm. Consequently, he did not discuss his reservations with MSHA,¹⁷ nor with the operator beyond the verbal exchanges recorded in the inspection reports. When this lack of communication was noted after the Crandall Canyon events, both BLM and MSHA informed the Commission that they have begun discussions intended to facilitate communication regarding safety concerns in underground mines on federal leases.

E. The Crandall Canyon Mine Accident

Because the Commission conducted no independent investigation of the circumstances of the Crandall Canyon Mine accidents, and received from MSHA no information regarding its investigation other than what was publicly available, the following account of the accidents is quoted from the testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, U.S. Department of Labor, before the U.S. Senate Committee on Health, Education, Labor, and Pensions on October 2, 2007.

Introduction

On August 6, at approximately 2:50 a.m. Mountain Daylight Time, a mine bump occurred at the Crandall Canyon mine, located near Huntington, Utah. The force of this mine bump was registered by seismographs, and the U.S. Geological Survey National Earthquake Information Center initially disclosed that an earthquake with a magnitude of 3.9 on the Richter Scale occurred near the mine. Seismologists with the U.S. Geological Survey National Earthquake Information Center in Colorado and the University of Utah have since stated that the seismic event was a mine collapse, not an earthquake. Inside the mine, the force of this bump

¹⁷ The Commission does not know whether MSHA was independently aware through its own inspections of the conditions BLM reported.

was so intense that it blew the ventilation stoppings out through cross-cut 95 – more than a mile from the area where the miners were working. After the event, six miners – Manuel Sanchez, Brandon Phillips, Alonso Hernandez, Don Erickson, Carlos Payan, and Kerry Allred – were missing. The subsequent rescue attempt within the mine moved slowly, because safety dictated the installation of rib supports consisting of 40-ton rock props, chain-link fence and steel cables to protect the rescue workers from further mine bumps. These safety precautions – which were recommended by experts from MSHA and outside the agency – proved not strong enough to prevent a second burst from fatally injuring three rescue workers. [Dale “Bird” Black, Gary “Gibb” Jensen, and Brandon Kimber were killed. Six miners were injured]. At that point, MSHA halted the rescue attempts inside the mine, while continuing the rescue work from the surface.

Crandall Canyon Accident Outline

On the early morning of August 6, 2007, a ground failure occurred at the Crandall Canyon Mine in Huntington, Utah, that, according to the U.S. Geological Survey, registered 3.9 on the Richter Scale, and was initially reported by the Associated Press as an earthquake. MSHA’s call center was subsequently notified and MSHA quickly dispatched an inspector to the mine site. Before arriving on site, MSHA issued a section 103(k) order over the phone which required management to evacuate the mine and effectively secure the site. This verbal order was put into writing early on the morning of August 6.

MSHA “(k) orders” are an enforcement tool used to ensure the safety of any person in a mine when accidents occur. The mine operator, in consultation with any appropriate State representatives must, under a (k) order, obtain MSHA’s approval of its rescue or recovery plans. The original (k) order issued by MSHA was modified several times in the days following the initial mine collapse. At Crandall Canyon, MSHA modified the (k) order to allow recovery operations to continue in accordance with approved site specific plans. These plans were signed by the senior onsite mine operator’s official and by the senior onsite MSHA official prior to their implementation.

Shortly after arriving on site, the MSHA inspector contacted the MSHA Field Office to report that a six-man crew was working in the South Barrier section when a bounce occurred that extensively damaged the mine’s ventilation controls. These individuals were unaccounted for, but they were believed to be working approximately four miles from the mine’s entrance.

On the afternoon of August 6, 2007, with MSHA's approval, Murray Energy Corp. began removing coal and debris from the Number 4 entry at crosscut 120. Meanwhile, a mine rescue team had breached the Number 1 seal in Main West, hoping to be able to get behind that seal and clear an easier pathway to reach the trapped miners. Unfortunately, the rescue team encountered significant amounts of coal blocking its pathway, and then had to withdraw altogether from the sealed area because another bounce occurred.

Mucking or clearing out the fallen coal from the main entry was a time-consuming process and Murray Energy and MSHA believed that it needed to reach the trapped miners more quickly to save their lives, if they survived the initial collapse. Thus, following the first day of the rescue operation, Murray Energy decided, with MSHA's consultation and approval, to drill bore holes into the mine from the surface in an attempt to establish contact with the miners and to assess the conditions in the area where they were believed to be.

By August 7, drilling had begun on the first borehole, which was a two-inch hole at crosscut 138. The mine operator selected all of the borehole locations with input and approval from MSHA. These locations were based upon the probable locations of the missing miners after the first bounce occurred on August 6. The first set of boreholes was drilled to intersect the mine at the location where the miners were last thought to be working at the time of the accident. Mine survey coordinates were used to pinpoint specific drilling locations.

In all, seven boreholes were drilled (the rest being 8 and 5/8 inches in diameter) but rescuers were not able to determine the location of the miners. In every borehole, rescuers attempted to insert a microphone and camera to either hear or see the trapped miners. Rescue workers also tapped repeatedly on the drill steel to signal to the trapped miners; miners are trained to reply by tapping below the surface. However, none of these communication efforts were successful.



As the rescuers continued to drill boreholes from the mine's surface, another group continued the mucking and clearing efforts in the mine's

entry until another bounce occurred on August 16, which claimed the lives of three of the rescuers and injured six others. Because of that bounce, mucking efforts within the mine were suspended indefinitely. Neither MSHA, nor the outside experts brought to the mine site to review the mining conditions and rescue plan could devise a way to stabilize and reenter the mine. MSHA believed the plan it approved for the rescue operations prior to August 16 provided the maximum amount of protection to the rescuers possible, but it was not enough.

Except for the initial exploration, and breaching the #1 seal into the West Mains as discussed by Mr. Stricklin, the operator, with MSHA approval, determined that sending rescue teams into the mine would be unproductive, and conducted the mine recovery and debris removal operations with its own work crews. Also, the operator, again with MSHA approval, led a group of reporters and others on an excursion into the mine during the recovery operations.

The Crandall Canyon Mine was placed in non-producing status on August 25, 2007. On September 28, the mine operator notified MSHA of its intent to erect barricades at the mine portals to prevent entry by unauthorized persons. MSHA investigative team leader Richard Gates informed the Commission on November 21 that permanent concrete-block barricades were in place on all portals.

F. NIOSH Review of the Roof Control Plans

Following the accidents, the United States Senate Committee on Health, Education, Labor, and Pensions on September 19, 2007, asked NIOSH to review the engineering analysis performed by Agapito Associates and relied on by UEI and, apparently, MSHA. NIOSH submitted its review on September 28. The review concluded that deep cover and low calculated stability factors in the remnant barrier pillars indicated “an elevated risk of bumps” associated with retreat mining of the North and South Barrier pillars. NIOSH found that assumptions made in the engineering process using both the empirical ARMPMS modeling program and the numerical LaModel program led Agapito to overestimate the load-bearing capacity of the coal remaining during and after pillar extraction. Although MSHA has advised the Commission that its local and

regional offices have access to both computer modeling tools, there is no indication in the material available to the Commission that MSHA questioned any of these assumptions when it reviewed and approved the roof control plans for operations in the North and South Barrier pillars.

G. Emergency Response by State Government

Following the collapse on August 6, MSHA and the Emery County Sheriff had primary responsibility for mine operations and public safety, respectively, and each was notified and on site soon after the initial accident. MSHA



immediately exercised its statutory authority under section 103(k) of the Mine Safety Act to forbid any operations at the mine unless approved by the responsible MSHA official at the site. As described above by Mr. Stricklin, the

effect of the “k order” was that the mine operator remained in control of all underground rescue and mine recovery operations, subject to approval by MSHA officials at the site.

After visiting the mine on August 6, Governor Huntsman convened an emergency cabinet meeting the following day to determine what state resources were available to assist with the situation. The state’s role as the events unfolded over the next three weeks was primarily logistical support. The Department of Public Safety, through the Utah Highway Patrol, assisted the Emery County Sheriff with traffic control, and the Division of Homeland Security provided transportation of supplies and equipment from distant locations. The Department of Natural Resources assisted with media relations. As the week progressed, additional state government representatives began to assist the families of the trapped miners with their personal needs. Assistance to the

miners' families was provided by the Governor's Office of Planning and Budget, the Utah Department of Health, the Department of Human Services, and the Department of Workforce Services, along with continuing efforts by the Department of Public Safety and the Department of Natural Resources.

The Governor actively participated in coordinating resources, supporting families, and communicating to the public on many of the days following the initial emergency, and members of his staff were present at a command center operated by Carbon County Emergency Services in Huntington. The Governor did not declare a state of emergency, and the Emery County Sheriff did not request that the Division of



Homeland Security assume responsibility for the public safety situation. The state government response was planned and implemented in the immediate aftermath of the mine accident. There was no specific emergency response plan in place to guide these efforts.

For much of the period when rescue and recovery efforts were underway, the Director of the Division of Oil, Gas and Mining, John R. Baza, was the Governor's representative and senior state official on location. During his presentation to the Commission, Mr. Baza provided a short list of personal impressions and lessons learned from witnessing the disaster response efforts firsthand, including the following:

1. MSHA provided information to the miner's families first, then to the public through press briefings. However, press briefings often were delayed and postponed while MSHA spent as much time as necessary to brief the families. The mine operator would often arrive at the press briefing site much before MSHA and give his public comments before the MSHA officials arrived at the scene.

2. MSHA and the mine operator appeared to work together on rescue operations following the mine bump. Many persons worked desperately and bravely to reach the trapped miners.
3. The families of the trapped miners were under a great deal of stress. Many organizations, including state government agencies, local government, and community services groups tried to care for the families to address their needs during this time.
4. The role of state government was undefined. MSHA made statements that they were actively communicating and working with the state, but state government representatives often seemed to be spectators to the events. There was no state agency with direct involvement in the rescue operations.

H. Community Resources

The victims' families appeared to receive substantial care and support during the Crandall Canyon disaster. Various community service organizations provided food, temporary sleeping quarters, counseling, and religious support. State government also provided counseling and onsite personnel to refer families to state resources available for their support. The greatest concerns expressed during the disaster related to information being provided to the families, and the manner in which it was provided, especially during the first few days immediately following the initial mine bump that trapped the six workers.

MSHA attempted to inform families of any new information generated during the rescue operations before it informed the public. MSHA did not exercise control over information being presented through the mine operator, and this proved disruptive to both the families and press representatives awaiting information. Several of the miners' family members required a Spanish language interpreter, which added to the communication challenges.

Mayor Hilary Gordon of Huntington and Mayor Joe Piccolo of Price, both Commission members, each played a personal role in the community response to the accidents. Though the accident occurred outside of the borders of

Huntington, victims' families and friends lived there, and the community was the venue for their briefings and support center. Mayor Gordon, in her third week of service as mayor, was thrust into the unexpected role of coordinating various basic needs for large numbers of people. In addition, the news media relied heavily on Huntington for its logistical needs. During the several weeks of the rescue and recovery operations the presence of numerous additional people (including rescue workers, government staff, and news media representatives) placed heavy demands on local food suppliers, hotel accommodations, grocery and other stores, and even laundry services.



Mayor Gordon relied on the County Sheriff to address public safety and law enforcement needs. She focused on coordinating the various offers of assistance for providing meals and even monetary donations for mine accident victims' families. No emergency response plan existed to guide her efforts.

Mayor Piccolo became involved most heavily when injured rescue workers were brought to the Castle Valley Regional Medical Center in Price on the night of August 16. He was faced, without preparation or training, with the challenges of providing support and services to family members and providing information to the media who were gathering at the hospital. He told the Commission that he felt ill-prepared for these roles and would have welcomed some advance training, or perhaps on-scene assistance from persons prepared to respond.

Governor Huntsman, appearing before the Commission and reflecting on his experience with the Crandall Canyon emergency, identified a need for clarity in the role of every entity with a duty to respond. He suggested that state government needed a "blueprint" to provide this clarity of roles and

communication. Beyond the need for coordination among government agencies, the experiences of both local and state officials at the scene suggest the need for better coordination of information with the miners' families. Such an effort would apply both to ongoing communication and safety concerns during non-disaster times as well as information management during disasters.

Chapter 6 – Recommendations

The Commission adopted the following forty-five recommendations at its meeting on January 11, 2008. In light of the diversity of viewpoint on the Commission, it is noteworthy that a reasonable consensus was achieved on the number and range of recommendations. The Commission is mindful that the recommendations deserve further debate and analysis in the policymaking arena. They are offered to facilitate that discussion. The Commission hopes that they lead to practical and constructive improvements for coal mine safety in the State of Utah.

A. State Safety Oversight

- 1. The State of Utah should establish an Office of Coal Mine Safety (OCMS) in the Utah Labor Commission with a mandate to maximize coal mine safety, coal mine accident prevention, and effective accident response.** The Commission's intent is that this office serve as a coordination point for coal safety in state government and be placed in the Utah Labor Commission. It should be funded and staffed commensurate with the responsibilities described in recommendations set forth below.
- 2. The State should enter into an innovative enhanced safety partnership with the Mine Health and Safety Administration to ensure the safety of Utah mines.** This partnership would involve state officials from the OCMS in direct participation with the MSHA inspection and plan approval program to understand the safety steps MSHA has taken since the Crandall Canyon tragedy and to determine how the state can reinforce MSHA safety efforts in Utah mines. The OCMS should pay particular attention to MSHA's expertise and staffing to address bump prone conditions in Utah mines. The OCMS should monitor MSHA inspection activities and obtain access to inspection reports, plans submitted for approval, and other information received by MSHA in the regular course of business. This collaborative process should involve the coal operators, the Commission's Technical Advisory Committee, and the resources of the local communities. The state and MSHA should collaborate on how the state can enhance safety for Utah miners and fulfill MSHA's safety preference for "additional pairs of eyes." This collaboration will include study of the state's role in mine plan approval and the feasibility of a state inspection program in light of the results of the Crandall Canyon accident investigations.

3. **The State OCMS should include a Coal Mine Safety Ombudsman alert system.** This system would enable any person, especially miners, an opportunity to report any safety concern through all available communications channels (telephone 800 number, email, mail, in-person reports). To encourage candor and forthrightness, this system would have strict legal protections that guarantee the privacy and confidentiality of the person making the report. The Ombudsman would investigate and, wherever indicated, act on such reports by taking concerns to any private or public person or entity, including MSHA and coal operators, who can address the concerns.
4. **The State OCMS should initiate a Coal Mine Safety Roundtable series for coordination and information sharing about safety issues and concerns.** Participation in the Safety Roundtable would include, but not be limited to, representatives of MSHA, state and federal land management agencies (e.g., Division of Oil, Gas, and Mining; School and Institutional Trust Lands Administration, Bureau of Land Management, Forest Service), coal operators, and miner representatives. The Roundtable should meet as needed but at least quarterly to ensure that safety issues are fully discussed and addressed by all participants having an interest in coal mine production and safety. The Roundtable initiative should also serve as a working group to develop a more efficient regulatory framework for the coal operators. Having to respond to multiple agencies with overlapping jurisdictions requires time and resources that could possibly be devoted more effectively to safety concerns. The state should propose to MSHA that the Roundtable serve as a pilot project focused on Utah to develop a more streamlined regulatory process.
5. **The State should take all steps necessary to ensure that health and safety concerns associated with liquid and gas hydrocarbon in Utah mines are effectively addressed through federal MSHA regulation.** Testimony from a Utah MSHA inspector before the Commission about the hydrocarbon danger experienced at the Willow Creek Mine and the inadequacy of current law is the basis for this recommendation.

B. Technical and Research

6. **The State should establish a Mine Safety Technical Advisory Council (MSTAC) consisting of members drawn from the Technical Advisory Committee to the Utah Mine Safety Commission and other appropriate appointees, including representatives of miners (union and non-union) and operators.** The OCMS would provide staff support to the MSTAC. The responsibilities of the MSTAC would include review and recommendation of the most readily available and effective mine

safety technology for use in Utah underground mining. Other responsibilities of the MSTAC are set forth in separate recommendations.

- 7. The Commission's Technical Advisory Committee should determine whether it can develop criteria and an efficient procedure to evaluate and determine whether an independent technical review of a particular mining plan is warranted by unusually challenging conditions presented in a given mine.** The conditions may include depth of cover, bump and fire hazard propensity, attempts at barrier pillar mining, and other risk-based sensitivity factors to be determined in consultation with ground control experts and with NIOSH. The review would concentrate on roof and ground control and on challenges particularly endemic to Utah coal mines. It would not extend to every ventilation, roof control, or emergency response plan submitted to MSHA. The OCMS, after obtaining independent review, would communicate any concerns it has to MSHA, the mine operator, and any miners' representative involved. The OCMS would work in a cooperative fashion with MSHA and the operator to resolve issues. To address concerns about delay of operations, the state should consider following the Virginia model of conducting its review contemporaneously with MSHA's and under a deadline. The Commission's Technical Advisory Committee (TAC) has examined the concept of applying greater scrutiny to mining plans that propose operations under unusually challenging conditions in underground Utah mines and needs additional time to work through the many challenging technical issues that are involved.
- 8. The State should establish a Research Institute for Mine Safety and Productivity (RIMSP).** This Research Institute would address the gap in support for mining research since Congress eliminated the U.S. Bureau of Mines in 1996 and the state terminated mine research funding from the State Mineral Leasing Fund in 1999. Similar research programs have been established in Illinois and other coal states. The RIMSP would concentrate on developing improved methods for mining under deep cover and other challenging conditions in Utah and other western states, including safety technology such as communication and tracking capability. Having a recognized research program working with industry would help attract additional funding from other sources such as NIOSH, DOE, and BLM. Research projects should be relevant to Utah mining and focus on safety and resource recovery. An Institute Board of Trustees consisting of academic, industry, and miner representatives would identify appropriate research topics in collaboration with the OCMS, MSTAC, MSERC, and WETC. Projects could address new mining methods, mine stress detection, planning ventilation systems, simulating mine fires, seismic monitoring, databases for best practices in bump-prone environments, safety modifications of mine machinery, technology for locating miners following an accident, and improved planning tools. The

Technical Advisory Committee suggests \$1 million in initial funding, which could come in part from redirected Mineral Lease revenue or a modest research levy on electrical energy produced by coal. Federal and industry funding support also should be pursued.

- 9. The State should upgrade seismic monitoring coverage of the coal-mining region of Central Utah to establish the basic infrastructure for effective regional-scale seismic monitoring of all areas of active coal mining and to enhance seismic monitoring at individual bump-prone active mines.** Utah should seize a one-time opportunity to acquire for permanent use three high-quality, three-component broadband seismometers with associated signal processing, power, and communications equipment. These strategically located stations currently monitor the Wasatch Plateau-Book Cliffs coalfields but are part of a temporary National Science Foundation experiment and will be removed in late 2008 or early 2009. Under the National Science Foundation "Earth Scope" program, this seismic equipment can be purchased for \$110,000 (plus \$5,000 annual maintenance), a significant savings, and become part of the University of Utah Seismograph Stations' (UUSS) regional network. An additional, relatively low-cost approach to enhance monitoring of mining-induced seismicity (MIS) would be to add a single above-mine digital accelerograph, linked by continuous telemetry to the UUSS, at selected active mines. This would require active cooperation and some support from the mines and would cost about \$15,000 for each installation, with modest installation and ongoing maintenance costs. Three mines currently have such above-mine instrumentation as part of partnering arrangements with the UUSS that entail modest monthly payments from the mines. To extend this type of monitoring capability to other mines, the UUSS is seeking one-time funding from NIOSH to capitalize instrumentation for as many as five mines that might be willing to undertake partnering arrangements similar to existing ones. This type of monitoring arrangement provides an opportunity to correlate mining activity with MIS and may provide important information for risk assessment associated with longwall operations. The state should encourage such arrangements and consider assistance if funding from NIOSH does not materialize.
- 10. The State should work with the University of Utah Seismograph Stations to develop a program for real time data processing of existing and improved mine-seismicity data to advance mine safety. The program should consider participation of trained personnel located in Utah's coal mining communities to participate in seismic monitoring.** Professor Walter Arabasz, Director of UUSS, has suggested the benefit of encouraging the Central Utah coal mining community to participate in the monitoring process by basing a monitoring training and observation operation in Utah's coal country, perhaps in conjunction with

CEU and WETC facilities and programming described in Recommendations #16 and #22. This program would include the training of seismic monitors. The Commission concurs in this suggestion, recognizing that such a program needs careful study, funding, and support from the coal operators.

11. The Mine Safety Technical Advisory Council (MSTAC) should evaluate the seismic monitoring system and work with the University of Utah Seismograph Stations and the coal operators to determine whether investment should be made to achieve high-resolution seismic monitoring capability at individual mines involving both in-mine and surface instruments. Professor Arabasz reports that this type of intensive seismic monitoring in coal mines is uncommon in the United States but has been pursued aggressively in Australia, Canada, China, Eastern Europe, and South Africa. The Commission recommends a thorough assessment of safety benefits, feasibility, costs, and public and private financing options.

12. The State should organize and sponsor a technical symposium on the causes of mountain bumps in coal mining areas and best practices to improve safety. The symposium may become an annual event to address safety issues specific to Utah and the West. The Commission recommends that this symposium take place in late spring or early summer of 2008 at an appropriate Utah location. The planning committee would consist of representatives from the MSTAC or the Commission's Technical Advisory Committee. The focus of the symposium should be on improving mine safety consistent with a strong coal mining economy in Utah. Topics could include:

- a. Improved safety training focusing on recognition of conditions contributing to bumps;
- b. Methods currently in use to reduce likelihood of damaging bumps;
- c. Summaries and lessons learned from past events;
- d. Strengths and limitations in pillar design procedures and mine layout practices;
- e. Remaining Utah coal resources and probable future coal mining conditions;
- f. Opportunities for industry, MSHA, NIOSH, BLM, and academia to work together on research designed to improve safety and productivity in Utah coal mines (development of theory, laboratory investigation, and field verification); and
- g. The present and possible roles of government agencies in assuring safety in bump-prone coal mines.

Funding for the symposium could come from sponsors, federal sources, registration fees, and modest state support.

C. Education and Training

- 13. The State should provide increased and stable funding for mining engineering education. This support is needed for faculty resources, curricular offerings, and the recruitment and retention of students. A logical source of this support would be to include mining engineering as an essential component of the statewide Engineering Initiative.** The Commission has received significant evidence of a serious ongoing and accelerating shortage of mining engineers who are critical to the safety and well-being of coal production in Utah. According to Professor McCarter, Chair of the Department of Mining Engineering, the 12 accredited mining engineering programs in the United States produce about 130 graduates each year, but the annual need for mining engineers is about 300 per year nationwide. About one-fourth of all U.S. faculty positions in mining engineering will become vacant in the next two years. In response to similar conditions in other engineering fields, the Legislature over several years has approved funds to hire faculty and improve facilities to facilitate program improvements and student enrollment. However, this funding has not been used in any substantial way to improve mining engineering education. To meet projected demand, the Department of Mining Engineering needs to expand its faculty to a recommended level of six full-time professors. The inclusion of mining engineering in the Engineering Initiative would assist in achieving this goal.
- 14. The State should encourage a public education campaign focused on Utah public schools and higher education to provide information about careers in energy, minerals, and natural resources.** This effort should be designed in part to address the serious workforce needs in the mining and energy occupations in light of a significant number of expected retirements in the coming years.
- 15. The Western Energy Training Center (WETC) should be the focal point for delivery of a comprehensive, state-supported training curriculum to foster miner safety and accident prevention in Utah's coal mines and to facilitate emergency rescue and response to coal mine accidents. The training program should be designed to address safety issues under Utah mining conditions, including improved training on the threat from coal mine bumps**
- 16. The State should support WETC's training efforts to prepare coal mining personnel to conduct safe operations and to enable the industry to recruit and retain qualified coal mine workers.** The Commission received testimony from multiple sources about the looming shortage of mining personnel in Utah and the nation. The National Mining Association estimates that 50,000 new miners will be needed over the

next five to seven years as demand rises and aging workers retire. WETC should receive support to offer basic skills training through qualified instructors and a rigorous curriculum offered through classroom sessions and simulated mining environments for new mine workers and for continuing education and training for experienced miners. WETC should be encouraged to work with various workforce transition programs such as Job Corps as a promising pathway for new miners to enter the Utah workforce. Once operational, the regional seismic monitoring network described in Recommendation #10 could provide valuable laboratory experience for students in instrumentation and data collection.

17. The State should seek federal administrative and/or legislative flexibility for WETC and the Utah Labor Commission to design training and certification programs that are tailored to the safety needs of Utah miners and not unduly constrained by MSHA requirements. CEU and WETC officials explained at Commission hearings that they are dedicated to formulating training programs that are focused on the safety needs of miners working in Utah mines. They also indicated that MSHA training requirements imposed unnecessary constraints on the development and implementation of optimal safety training curricula. Accordingly, the Commission urges state officials to work through the Utah congressional delegation and with other states to achieve the flexibility in MSHA regulations, and, if necessary, in federal legislation, to enable development of the best safety program for Utah miners.

18. The State should support a New Coal Miner Training Program at WETC that exceeds the basic curriculum and test required by MSHA. Additional state funding support for CEU should be considered to facilitate this program, and the State should request more federal funding for the MSHA States Grants program. Also, the State should provide adequate funds to the Utah Labor Commission as described in Recommendation #31. WETC currently offers new miner training that meets all MSHA requirements for topical coverage, but it supplements this minimum with experienced-based learning modules in simulated mining environments based on Utah mining conditions. WETC also supplements MSHA's online national test with a final project to increase learning retention. The Commission believes that WETC is moving in the right direction and should continue to expand and develop this approach. The funding mechanism is a limiting factor. It is based in part on the MSHA States Grants program, which provides funds to the Labor Commission that are then passed through to CEU for WETC under a memorandum of understanding. ULC and CEU have found this arrangement to be cumbersome and inadequate.

- 19. The State should encourage WETC to develop a Continuing Coal Safety Education Program at WETC to ensure that Utah miners have the most advanced training to keep them safe.** The Commission recognizes that coal operators conduct on site continuing safety education for its employees. The WETC program would be designed to complement and supplement those efforts, and it should be planned and implemented in collaboration with the operators and miner representatives. Part of this training should include realistic and meaningful instruction in simulated mine environments.
- 20. WETC should facilitate a Miner Safety Mentoring program that draws on the experience and expertise of current and retired miners.**
- 21. The State should support a Coal Management Safety Training program at WETC to ensure that mine managers have the leadership and administrative skills and the latest knowledge about safety and best practices to facilitate a safe working environment in Utah coal mines.** The Commission received substantial evidence on the need to develop replacements for positions at all levels of coal mining in Utah, including management positions at the mines. Training to develop management skills, including opportunities for mentoring and internships, should be provided in preparing the next corps of future managers and supervisors from the ranks of today's mine workers.
- 22. The State should encourage the University of Utah Department of Mining Engineering and WETC to collaborate on engineering preparatory programs for both traditional and non-traditional students and on opportunities for teaching partnerships involving their respective faculties.** The Commission heard testimony indicating there are potential benefits from collaboration between WETC and the University of Utah Department of Mining Engineering, including mini-courses offered by University faculty at WETC and practical training for University students facilitated by WETC. For example, WETC should partner with the University of Utah Department of Mining Engineering to provide short courses in such fields as ventilation engineering and electrical engineering. In addition, WETC could partner with the UUSS to provide hands-on experience with instrumentation and data collection from the seismic monitoring network proposed in Recommendation #10.
- 23. CEU and the Department of Mining Engineering should develop a proposal for an associate degree in mining technology for presentation to the Utah State Board of Regents.** This proposal will help in the education and recruitment of needed mining engineers for Utah's coal mines and will provide a significant educational and career opportunity for students attending CEU.

24. The Legislature should give serious consideration to WETC's training equipment proposals, including various funding options that may be pursued. CEU and WETC have developed a list of training equipment needs, including an underground mine simulator that has been added to safety training programs in Pennsylvania and Virginia. The Commission urges the Legislature to give careful consideration to these proposals and to consider funding mechanisms that include federal and industry support as well as partnerships with other states who might be interested in participating in this training operation.

25. The board overseeing WETC should include representatives from the miners, industry, academia, and the community and should focus on developing a training program to maximize safety in Utah coal mines. The board should conduct an assessment of the training programs based on the best available performance measurement system. The U.S. Department of Commerce, Manufacturing Extension Partnership, offers a performance metrics system that is considered to be an effective assessment tool for the WETC program.

D. Testing and Certification

26. The Utah Labor Commission should continue to administer the testing and certification requirements for miners in the State of Utah. WETC and the Labor Commission should develop an effective working relationship to ensure that miner safety training and miner certification are appropriately coordinated. The testing component of the certification process should be the exclusive responsibility of the Labor Commission to protect the integrity of the certification process.

27. The Legislature should direct the Labor Commission or another appropriate entity to conduct a thorough review of coal mining certification programs in other states and seriously consider expanding the number of mining occupations that it certifies for work in Utah mines. Utah law in Section 40-2-15 of the Utah Coal Mine Act currently requires competency certification for five coal mining positions: underground foreman, surface foreman, underground mine electrician, surface mine electrician, and fire boss. Federal regulations administered by MSHA require state certification of these positions. Other coal mining states certify other positions as well, having determined that certain responsibilities in the mines require technical knowledge and skills necessary for mining operations that involve risk of serious harm if not performed correctly.

28. The Legislature should direct the Labor Commission or another appropriate entity to conduct a thorough review of coal mining recertification programs in other states and seriously consider whether Utah should adopt stricter requirements than it has now.

Section 40-2-15(5) of the Coal Mine Act provides that the Labor Commission's certification of competency for any of the foregoing coal mining occupations "shall expire if the certificate holder ceases to work in the mining industry or a mine related industry for more than five consecutive years." Thus, a certified individual who leaves the industry for more than five years must again pass certification requirements before resuming work in an occupation requiring certification. This standard is generally consistent with the requirements of other coal-mining states but not all of them. In light of the rapid development of new technology in underground coal mining, especially on safety matters, the Commission urges consideration of a more rigorous recertification standard.

29. The State should require certification of new coal miners. Utah currently does not require certification of new coal miners. It should. Each miner, whether a veteran or a novice, can affect safety for everyone in the mine. It is critically important that each newly-hired miner learn safe mining procedures and understand the importance of safety before entering the mine. The State needs to assure the community that new miners have the necessary safety skills. This certification requirement reinforces the point that employment as a miner is conditioned on safety. Implementation of this requirement will require legislative amendment of Section 40-2-15 of the Utah Coal Mine Act.

30. The State should strengthen the Miner Certification Panel overseeing coal miner safety testing and certification. The coal miner training and certification program should be strengthened by augmenting the structure and role of the existing Miner Certification Panel within the Labor Commission. Under the existing statute, the Certification Panel is comprised entirely of coal miners and managers, and the panel's authority is limited to overseeing the certification process. The Certification Panel does not include representatives of the institutions that actually train miners, resulting in difficulties in coordinating the training and certification processes. To resolve this problem, the Commission recommends that representatives of the training institutions – CEU, WETC, and perhaps the Department of Mining Engineering – should be added as members of the Certification Panel. Implementation of this requirement will require legislative amendment of Section 40-2-14 of the Utah Coal Mine Act.

31. The State should strengthen and stabilize the Labor Commission's certification program with a reliable funding source. The MSHA States Grants program and test fees partially fund the certification program. This funding is inadequate and uneven. For example, since the

Crandall Canyon events, the number of certification examinations has declined by 25 percent. In light of the important role miner certification plays in overall coal mine safety, and the need to augment the membership and role of the Miner Certification Panel, the Commission recommends that the Legislature appropriate ongoing general funds sufficient to allow the Labor Commission to maintain a competent and effective certification program, including a full-time testing and certification coordinator in Price.

- 32. WETC and the Labor Commission should develop strategies in the training, testing, and certification programs that address language barriers faced by individuals who wish to work in the Utah mining industry. WETC and the Labor Commission should investigate how other coal states have addressed this issue.**

E. Emergency Response and Family Support

- 33. The State should recognize that the local law enforcement agency is the primary first responder for public safety purposes when an industrial accident occurs in Utah, including a mining accident.**
- 34. The OCMS should be the lead state office in the emergency response to a coal mine accident. It should work with the Division of Homeland Security and appropriate state agencies to develop a blueprint to guide state government assistance in the rescue and recovery operations following a coal mine accident.** The Commission recognizes that the emergency response to coal mine accidents involves a complex system of federal, state, and local government agencies, coal operator mine rescue teams, and local community support. The accounts presented to the Commission about the emergency response to the Crandall Canyon disaster were favorable in terms of state and local government support. The leadership provided by Governor Huntsman and Sheriff Guymon was singled out for commendation. However, in his appearance before the Commission, Governor Huntsman indicated that the state response was based largely on ad hoc decision-making and that coordination and communications involving MSHA and the mine operator were deficient. He called for development of a “blueprint” to guide state and local government in any future critical incidents, and the Commission agrees.
- 35. The state should adopt a legal requirement for mine operators to notify the OCMS immediately when a mine emergency situation occurs.** OCMS should collaborate with the mine operators and MSHA to develop the procedures for a rapid notification system.

36. The Division of Homeland Security should work with the OCMS, appropriate state agencies, and local government officials to develop a mine accident emergency response plan for state government using the Incident Management model and the State Emergency Operations Plan. The plan should provide the guidance the Governor has requested and the flexibility needed for the variety and uncertainty of circumstances that could be faced. The elements of the plan should include assistance to local law enforcement, assistance with mine rescue equipment and resources, telecommunications services, equipment and personnel transport, and state workforce and human services resources. Formulation of the plan should take account of all the state agencies and personnel involved in the Crandall Canyon response and should inventory all of the potential state government support that might be helpful in a mine accident emergency. The plan should identify the OCMS, in cooperation with the local law enforcement authority, as the responsible on-site agency for requesting emergency assistance from the Division of Homeland Security. The coal operators should be consulted to determine how the state can assist in implementation of their emergency response plans. A current effort in the State of New Mexico may provide a useful model in developing this plan.

37. The State should initiate a mine accident emergency coordination planning process that would include coal operators; miner representatives; local, state, and federal agencies; and community representatives to design a Rapid Crisis Response Critical Mine Incident Plan to ensure maximum coordination, communication, and effective command control in the event of an underground mine accident in any Utah mine. The plan would aim for full integration and coordination of each coal mines' emergency response plan and mine rescue team consistent with federal law.

38. The State should establish a Mine Safety Emergency Response Center (MSERC) at the Western Energy Training Center (WETC) near Helper, Utah to facilitate emergency response training and to house specialized emergency response equipment, such as jet engine fire suppression, gas chromatography, and special tunneling equipment. The Center would serve underground coal mines in Utah and possibly Wyoming and Colorado and could ultimately serve other mining operations in the Intermountain West. It would provide classroom and field space for advanced emergency response training for industry stakeholders, including executive management, training for community and agency support networks for the mining industry, and specialized safety and rescue equipment that could be used by all participating mines. The Center would be integrated with the WETC training program and would concentrate on mining disaster prevention, emergency

preparedness, and emergency response and rescue. It should seek continuing technical input from the MSTAC.

- 39. The OCMS should consult with Utah coal operators to determine whether the State could assist in strengthening mine rescue team capacity. Subjects for consideration would include whether the State should provide emergency medical technician training for team members EMT personnel as members of the team, facilitate mine rescue simulations and competitions, and deliver communication technology and coordination for mine rescue operations.**
- 40. The OCMS and the Division of Homeland Security should organize an annual mine safety emergency response training exercise involving the coal operators, MSHA, and other relevant federal agencies, local law enforcement, local emergency response teams, and local community leaders and their designated participants. This exercise might benefit from coordination with mine rescue team contests.**
- 41. The State should request the assistance of Emery County Sheriff Lamar Guymon in the development of a state emergency response plan and the coordination of a mine accident emergency response simulation exercise.** During Commission hearings, Sheriff Guymon was universally praised for his professional and effective leadership in supervising the public safety response to the Crandall Canyon incident. He also played a key role in the response to the Wilberg Mine disaster in 1984. Based on his experience and superior performance, the state should draw on Sheriff Guymon's experience and knowledge.
- 42. The OCMS should represent Utah State government at the incident command center for any Utah mine disaster. OCMS officials should be prepared to assist with information management, decision-making, and coordination of state government logistical support during the emergency rescue and response period.**
- 43. The State should work with MSHA and the coal operators to develop a clear set of protocols for timely and accurate communications with the families of mine victims and with the press and public in the context of a Utah coal mine accident. The families of the Crandall Canyon victims and the media should be invited to provide comment and suggestions on these protocols.** The provision of information to the families of the trapped miners and rescuers as well as to the press and public during the Crandall Canyon events has been criticized for lack of timeliness, consistency, coordination, and leadership. MSHA is designated under current law to take the lead in this area, but that responsibility was performed unevenly at Crandall Canyon, at least in part

due to the conduct of the owner of the coal company. Under these challenging conditions, it is important that all parties understand and follow their roles. The families in particular are entitled to the best available information provided with professionalism, accuracy, and respect.

- 44. The State should work closely with MSHA and local community leaders to develop a comprehensive support plan for families of mine accident victims. The communication protocols from recommendation #43 should be one of the core components of this plan.** Although MSHA currently takes the lead in this area under federal law, it was clear from the Crandall Canyon experience and other mine accidents that local communities and local responders play key roles and should continue to do so based on their knowledge of their own communities. Pending federal legislative proposals call for adoption of a family support model similar to the National Transportation Safety Board system, which is considered the strongest federal model. Although this step may be an improvement, state and local officials should insist that plans and understandings be reached in advance to preserve the role of the local community in providing support to families of mine accident victims.

F. Mine Accident Investigation

- 45. The State should join with other coal states in urging Congress to consider a mine accident investigation system that operates independently of MSHA. Conducting the accident investigation outside the agency would assure families of victims, their communities, and the public that the investigation is conducted in a thorough and impartial manner.** This recommendation is presented as a principle of good government and takes as its model the investigation of aviation accidents by the National Transportation Safety Board rather than the Federal Aviation Administration. It should not be construed as a reflection on the professionalism or competence of the MSHA investigation of the Crandall Canyon Mine disaster.

Appendix A. Executive Order



Jon Meade Huntsman, Jr.
Governor

EXECUTIVE ORDER

Creating the Utah Mine Safety Commission

WHEREAS, the State of Utah seeks to make certain those who work in underground mines are safe;

WHEREAS, the Crandall Canyon Mine disaster has raised questions about mine safety in Utah;

WHEREAS, the role of the State of Utah in mine safety and rescue efforts needs to be reviewed to determine whether the current level of participation in mine safety is appropriate or whether there are areas the State could be more involved.

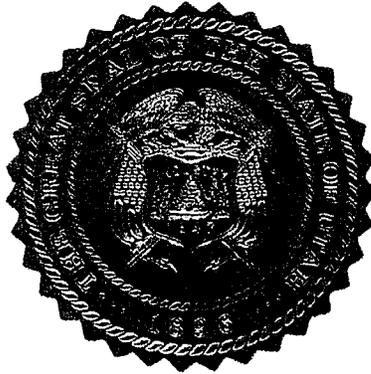
NOW, THEREFORE, I, Jon M. Huntsman, Jr., Governor of the State of Utah, by virtue of the authority vested in me by the Constitution and laws of the State of Utah do hereby order the following:

1. There is created the Utah Mine Safety Commission:
 - a. Consisting of members who are appointed by and serve at the pleasure of the Governor;
 - b. The Division of Oil, Gas, and Mining in the Utah Department of Natural Resources will provide staff and budgetary support;
 - c. The Commission may seek expert assistance through recruitment of a volunteer technical advisory committee;
 - d. The Commission may conduct hearings in locations across the state deemed appropriate.
2. The commission shall:
 - a. Review the role of the State of Utah in the area of mine safety, including the safety inspection process, accident prevention, and accident response;
 - b. Review the Crandall Canyon Mine disaster and the State's role in mine safety leading up to the incident;
 - c. Assess the role of state and local government relative to the federal government and private industry in ensuring mine safety;

- d. Examine how the State can assure itself that the Mine Health and Safety Administration (MHSA) and private mining companies are doing everything reasonably possible to ensure the safety of Utah miners, their families, and their communities.
- e. Recommend changes in the State's role for the future of mine safety and accident prevention;
- f. Make policy recommendations, if appropriate, regarding how the State should promote mine safety, including any needed legislative changes at the state and/or federal levels.

3. Members of the Utah Mine Safety Commission serve without compensation. However, council members may be allowed meeting per diem, mileage, and travel reimbursements. All such reimbursements must be approved by the Executive Director of the Department of Natural Resources, and must be funded from the Department's existing budget.

4. Under current Utah law, the Commission will not have subpoena power or similar investigative authority, and, accordingly, will not be tasked with investigating the cause(s) of the Crandall Canyon Mine disaster or with determining any fault for its occurrence.



ATTEST:

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Utah. Done in Salt Lake City, Utah, this 27th day of August, 2007.

Jon M. Huntsman, Jr.
Governor

Gary R. Herbert
Lieutenant Governor

Appendix B. Commission Members and Staff

SCOTT M. MATHESON, JR., Commission Chairman

Scott M. Matheson, Jr., is Professor of Law at the University of Utah S.J. Quinney College of Law. He was born in Salt Lake City and attended public schools there. He graduated from Stanford in economics, Oxford in modern history as a Rhodes Scholar, and Yale Law School. He has served as a Public Policy Scholar at the Woodrow Wilson International Center for Scholars in Washington, D.C., Dean of the University of Utah S.J. Quinney College of Law, United States Attorney for the District of Utah, Associate Dean at the University of Utah College of Law, Visiting Associate Professor at the John F. Kennedy School of Government at Harvard, Deputy County Attorney for Salt Lake County, associate at the Washington, D.C. law firm of Williams & Connolly, manager of two successful gubernatorial campaigns, and legislative assistant in a congressional office.



JOHN BAZA, Commission Executive Secretary

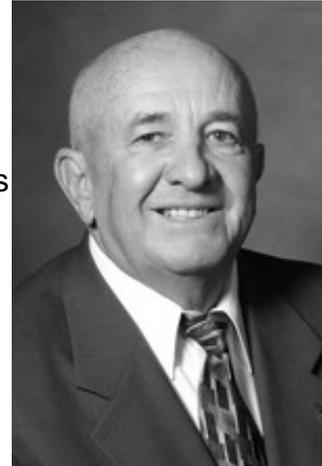
Mr. John Baza is currently the Director of the Utah Division of Oil, Gas and Mining, having been appointed to that position on May 6, 2005. He is a petroleum engineer by education and work experience, holding both Master of Science and Bachelor of Science degrees in petroleum engineering from Stanford University. Mr. Baza's career spans nearly 30 years in the energy industry and his experience includes engineering positions with several major and independent petroleum companies including Phillips Petroleum Co., Amoco Production Co., and Flying J Oil and Gas Inc. He has been involved in petroleum exploration and development in Wyoming, North Dakota and Utah, and he has also worked on geothermal power projects in Utah, Nevada, and California. Mr. Baza has over 15 years of direct experience with the Oil and Gas Conservation Program of the Division of Oil, Gas and Mining - first as the state's Petroleum Engineer, and then as the Associate Director of the Oil and Gas Program. During that time, he was responsible for regulation of the upstream oil and gas industry in Utah in order to achieve appropriate development and conservation of Utah's valuable petroleum resources. Now as the Director of DOGM, he leads the Division's efforts in the areas of petroleum, coal mining, and mineral mining, along with abandoned mine reclamation. Mr. Baza is a registered professional engineer in



Utah. He is also a 30+ year member of the Society of Petroleum Engineers having held various officers positions including section chairman, program chairman, and scholarship committee chairman. He is married and has four children ranging in age from 19 to 26.

MIKE DMITRICH

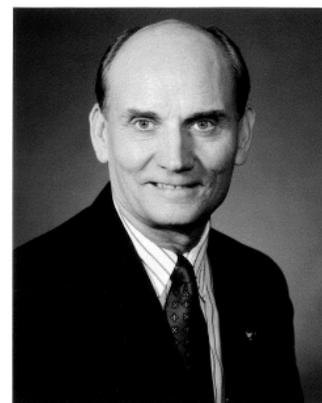
Senator Mike Dmitrich was raised in the mining town of Consumers, Utah. He has more than 30 years' experience in the coal mining industry, below ground and above ground, as a miner, a government affairs specialist, and now as a natural resources consultant. Senator Mike Dmitrich was elected to the Utah House of Representatives in 1968, appointed to the Utah State Senate in 1991, and elected to the Senate in 1992. He is currently the Senate Minority Leader (2001-present) and also was House Minority Leader (1983-1990) while serving in the Utah House of Representatives. He has served continuously in the Utah Legislature for the past 39 years and is the longest serving legislator on Capitol Hill. He proudly represents Senate District 27 comprised of Carbon, Emery,



Grand, San Juan and Utah counties. Senator Dmitrich is a passionate voice on Capitol Hill for public and higher education and for the health and economic stability of Utah's families. Throughout his political career in Utah, he has focused on natural resources and education. He has served on many state and national task forces and committees that address these important issues. At the Utah State Senate, Senator Dmitrich is a member of the Public Utilities and Technology Standing Committee, the Revenue and Taxation Standing Committee, the Capital Facilities and Government Operations Appropriations Subcommittee, the Executive Appropriations Committee, and numerous other committees and task forces. Senator Dmitrich and his wife Georgia reside in Price, Utah, and are parents of three and grandparents of three.

E.J. "JAKE" GARN

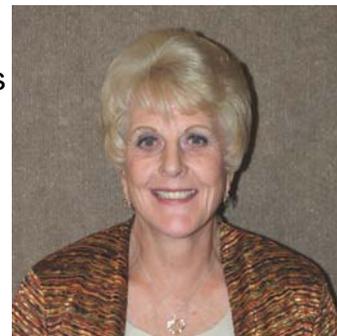
Jake Garn was born in Richfield, Utah. He attended Utah public schools and is a graduate of the University of Utah in Salt Lake City where he received a Bachelor of Science degree in Banking and Finance. In 1957 he married the late Hazel Thompson and they had four children: Jake, Jr., Susan, Ellen and Jeffrey. In 1977 he married Kathleen Brewerton who had a son, Brook, from a previous marriage. They have a son, Matthew, and a daughter, Jennifer, and seventeen grandchildren. He served in the



U.S. Navy as a pilot. He is a retired Brigadier General in the Utah Air National Guard and has logged more than 12,000 hours of pilot time. He is a former insurance executive and served as Mayor of Salt Lake City prior to his election to the United States Senate in 1974. He served six years as Chairman of the Senate Committee on Banking, Housing and Urban Affairs. He was a member of the Senate Appropriations Committee and served as Chairman for six years of the VA, HUD, and Independent Agencies Subcommittee. He also served on the subcommittees on Energy and Water Development, Defense, Military Construction and Interior. He was a member of the Energy and Natural Resources Committee and served on three subcommittees: Public Lands, National Parks and Forests; Research and Development; and Water and Power. He also was a member of the Senate Rules Committee and served three terms as Secretary of the Republican Conference. As Senator, he was re-elected to a second term in 1980 and a third term in 1986 with 74% of the vote in each election. In November of 1984, Senator Garn was invited by NASA to fly as a payload specialist on flight 51-D of the space shuttle Discovery. During the seven-day mission, he performed various medical tests. Discovery Flight 51-D landed at Cape seven-day mission, he performed various medical tests. Discovery Flight 51-D landed at Cape Canaveral on April 19, 1985 after orbiting the earth 109 times. In December of 1992, Senator Garn received the very prestigious aviation award, the Wright Brothers Memorial Trophy. Mr. Garn retired on January 3, 1993, from the United States Senate after three terms (eighteen years) to return to Utah and is currently a self-employed consultant. He serves on the boards of the National Air & Space Museum (Washington, DC), and United Space Alliance (Houston). He is also involved with numerous local private/public sector endeavors that include Escrow Bank USA, BMW Bank of North America, Headwaters Incorporated, Franklin Covey and NuSkin Enterprises, Inc. and Primary Children's Medical Center Foundation.

HILARY GORDON

Hilary Gordon, a native of London, England, became Mayor of Huntington, Utah, less than three weeks before the tragedy at Crandall Canyon. Mayor Jackie Wilson was forced to resign the post due to ill health and the Huntington City Council asked Ms. Gordon to take the post. Prior to becoming Mayor, Ms. Gordon served six years on the City Council where she was responsible for the city cemetery, a street lighting project and overseeing Huntington's "Heritage Days" celebration and rodeo. Ms. Gordon came to the United States in 1964, originally settling in Salt Lake City, before moving to Huntington with her husband, who became a coal miner. During the disaster at Crandall Canyon she was prominent in organizing support for the families of trapped miners and remains involved in the distribution of donations for the families of the miners killed in the accident.



DAVID A. LITVIN

Mr. Litvin became President of the Utah Mining Association in May of 2004. The Association includes as members, the major coal, hardrock, and minerals producers throughout the State of Utah, and companies that provide goods and services to the Utah mining industry. Prior to joining the UMA, Mr. Litvin was employed with Kennecott from 1979 to 2003 where he held numerous positions over 24 years: Vice President for Health, Safety and Environment; Director of Federal Government Affairs; Director of Precious Metal and Sulfuric Acid Sales; and Director of State Government and Public Affairs. Before coming to the private sector, Mr.



Litvin spent 15 years in Federal Government Service where he worked for the Department of Defense, Department of Energy, and the U.S. Environmental Protection Agency. He received a Bachelor of Science degree in Metallurgical Engineering from Drexel University in Philadelphia, PA, and a law degree from George Washington University Law School, in Washington, D.C.

KAY McIFF

Representative Kay McIff has had a long and illustrious career professionally and in public service. Before his election to the Utah House of Representatives, he served as the Presiding Judge in Utah's Sixth District Court which covers Sanpete, Sevier, Wayne, Piute, Garfield and Kane counties. Prior to that, he had a broad-based general law practice in Federal and State Courts throughout Utah and served multiple terms as County Attorney in both Sevier and Piute. A native of Sanpete County, Mr. McIff graduated from Manti High School, Utah State University, and the University of Utah where he obtained a Juris Doctorate Decree. At the time of his appointment to the bench, he was serving as a member of the State Board of Regents governing Utah's system of higher education. He



previously served as Chair of the Board of Trustees of Southern Utah University. A long-time friend of education, he was instrumental in the effort which led to the establishment of Snow College Richfield. He received an Honorary Doctorate of Humane Letters from Snow College in 1996. Mr. McIff has also served as Chair of the Sevier County Republican party, a member of the Sevier Valley Hospital Governing Board and in the presidency of the Richfield Utah Stake of the LDS Church. During his eleven years with the Utah Judiciary, he became Chair of the

Board of Utah's District Court Judges, and at the time of leaving the bench was a member of the Judicial Council, the Governing Body for Utah's Judicial Branch. After returning to private life, Mr. McIff joined with his son Mark in establishing the McIff Firm located in Richfield. He is currently engaged in the general practice of law as well as representing the Counties of Sanpete, Sevier and Emery in the Utah Legislature.

DENNIS BRYAN O'DELL

Dennis O'Dell is Administrator for Occupational Health and Safety for the United Mine Workers of America, headquartered in Fairfax, Virginia, a position he has held since 2005. He is responsible for overseeing all UMWA health and safety operations for coal and non-coal members in the United States and Canada. Most recently Mr. O'Dell has worked with members of the U.S. Congress and the U.S. Senate to create the Mine Improvement and New Emergency Response Act of 2006, also known as the MINER Act. This legislation, the most significant mine safety legislation in 30 years, amends the Mine Safety and Health Act of 1977. Prior to



his current position Mr. O'Dell served as the UMWA's International Health and Safety Representative, responsible for representing coal and non-coal members primarily in West Virginia, Ohio, Pennsylvania, Maryland and New York on various health and safety issues. He has helped coordinate and/or conduct 16 coalmine accident investigations, including the Sago Mine Disaster. He works continuously with the states of West Virginia, Virginia, Pennsylvania, Illinois, Kentucky, Ohio, and Alabama on writing and adopting new safety regulations to improve safety. He has also served as a United States representative to an International Labour Organization expert panel on Safety and Health in Underground Coal Mines. That group, made up of government, worker and employer representatives from Australia, China, Germany, India, Poland, Russian Federation, South Africa, and the United States, revised the existing code of practice on safety and health in underground coalmines, enhancing and improving coalmine health and safety internationally. Mr. O'Dell's many years of experience as an underground coalminer and as a classroom instructor for the training of miners at the National Mine Academy of Beckly and as an instructor for Joint Industry Training classes, provides the Utah Mine Safety Commission with important and relevant knowledge and experience.

JOE PICCOLO

Joe L. Piccolo was born and raised in Carbon County, Utah, and has made Price City his home. Mr. Piccolo Graduated from Carbon High School and attended the College of Eastern Utah in Price. Joe is married to his best friend, Barbara Ann, and together they have three children and two grandchildren. He has been a successfully self-employed Price area businessman in the automotive repair and maintenance industry for over 39 years. Mr. Piccolo has dedicated his life to service of his community for long-term benefits, quality of life issues and prosperous economic conditions for all residents and businesses, not just in Price but the surrounding area as well. Among his numerous community posts and achievements, Mr. Piccolo served as a Price City Councilman for six years, as a member of the Planning and Zoning Commission, as chairman and member of the Utah Water Quality Board of Directors, and has served as President of the Utah League of Cities and Towns



Appendix C. Meetings of the Commission

September 10, 2007	Price, Utah Western Energy Training Center
September 25, 2007	Huntington, Utah Huntington Elementary School
October 2, 2007	Price, Utah College of Eastern Utah
October 22, 2007	Salt Lake City, Utah Utah Department of Natural Resources
November 13, 2007	Salt Lake City, Utah State Capitol Complex
November 20, 2007	Salt Lake City, Utah University of Utah, S.J. Quinney College of Law
December 11, 2007	Salt Lake City, Utah State Capitol Complex
January 3, 2008	Salt Lake City, Utah State Capitol Complex
January 11, 2008	Salt Lake City, Utah State Capitol Complex

September 10, 2007
Western Energy Training Center
Price, Utah

1. Greeting and Introduction
10:00 – 10:20 a.m.
Scott Matheson, Jr., Chairman
2. Introduction of Public Comment Process
10:20 – 10:30 a.m.
Scott Matheson, Jr., Chairman
3. Background and History of Mine Safety Regulation in the State of Utah
10:30 – 11:00 a.m.
Alan Hennebold, Deputy Commissioner & General Counsel, Labor
Commission
4. The Role and Responsibilities of MSHA in the State of Utah
11:00 – 11:30 a.m.
MSHA representative
5. Briefing on the MSHA Investigation into the Crandall Canyon Mine Incident
11:30 – 12:00 noon
MSHA representative
6. Mine Emergency Response Procedures
1:00 – 1:30 p.m.
Emery County Sheriff Lamar Guymon
Commissioner Scott Duncan, DPS
7. The Role and Responsibilities in Regards to Mining of the Utah Division of
Oil, Gas and Mining
1:30 – 2:00 p.m.
John Baza, Director
8. Discussion by Commission Members of Future Meetings and Public Hearings
9. Other Commission Business
Steve Alder
 - Briefing on GRAMA and Open Public Meetings Act
 - Resolution for Future Electronic Meetings

**September 25, 2007
Huntington Elementary School
Huntington, Utah**

1. Introduction and Welcome
10:00 a.m.
Scott Matheson, Jr., Chairman

2. Reports by Coal Mine Operators Regarding Coal Mine Safety and Accident Response
10:10 a.m. – 11:45 a.m.
 - a. Doug Conaway, Director of Corporate Safety, Arch Coal, Inc.
 - b. Ray Bridge, Safety Manager, Arch Coal, Inc., Canyon Fuel Company, Dugout Mine
 - c. Allen Childs, President and Owner, Talon Resources, Inc
 - d. Scott Turner, Safety Director and Trainer, Talon Resources, Inc.
 - e. Carl Pollastro, Director, Technical Services and Project Development, Interwest Mining Company
 - f. Ralph Sanich, Safety Director, Interwest Mining Company

3. Welcome and Explanation of Hearing Process
1:00 p.m.
Scott Matheson, Jr., Chairman

4. Public Comment Period
1:20 p.m. – 10:00 p.m.

**October 2, 2007
College of Eastern Utah
Price, Utah**

1. Introduction and Welcome
Scott Matheson, Jr., Chairman
2. Reports by Safety Training Educators
 - a. Representatives of College of Eastern Utah
Miles Nelson, Vice President, Workforce Education
Dale Evans, Program Manager of Mining, Technology Department
 - b. Invited Representative of Western Energy Training Center
 - c. Invited Representative of Coal Mine Industry.
3. Welcome and Explanation of Hearing Process
Scott Matheson, Jr., Chairman
4. Public Comment Period

**October 22, 2007
Salt Lake City, Utah
Department of Natural Resources**

1. Introduction and Welcome
Scott Matheson, Jr., Chairman
2. U.S. Forest Service
Barry Burkhardt, Assistant Director of Biophysical Resources
3. School and Institutional Trust Lands Administration
Tom Faddies, Assistant Director of Minerals
4. Utah Geological Survey
Dave Tabet, Geological Program Manager/Senior Scientist
5. Modern Coal Mining Methods and the Crandall Canyon Disaster
Michael G. Nelson, Chief Technical Officer, Palladon Ventures
Associate Professor of Mining Engineering, University of Utah

**November 13, 2007
Salt Lake City, Utah
State Capitol Complex**

1. Introduction and Welcome
Scott Matheson, Jr., Chairman
2. Technical Advisory Group
Kim McCarter, Professor of Mining Engineering, University of Utah
3. Mine Rescue and Mine Communications

Kevin Tuttle, Manager of Health and Safety, Energy West Mining Company
4. Governor's Remarks
Governor Jon M. Huntsman, Jr.
5. Individual Comments
Darwin "Dobby" Guymon
6. Accident Response
John Baza, Director, Utah Division of Oil, Gas and Mining
7. Issues Identification and Report Preparation
Roundtable discussion by Commission members

November 20, 2007
Salt Lake City, Utah
S.J. Quinney College of Law, University of Utah

1. Introduction and Welcome
Scott M. Matheson, Jr., Chairman
2. The Role of Federal and State Government in Mine Safety, Accident Prevention, and Accident Response.
Kevin G. Stricklin, Administrator For Coal Mine Safety and Health, MSHA
3. Status Report of MSHA Investigation into Crandall Canyon Mine Accident
Richard A. Gates and Sherrie Hayashi, MSHA Investigation Team
4. CEU/WETC Mine Safety Education
Kevin Walthers, College of Eastern Utah
5. Utah Legislative History of Mine Safety
John Kirkham, Esq., Stoel Rives, LLP.
6. Mining Induced Seismicity in the Crandall Canyon Coal Mine Area, Overview and Update
Walter Arabasz, Director, University of Utah Seismograph Stations

December 11, 2007
Salt Lake City, Utah
State Capitol Complex

1. Introduction and Welcome
Scott M. Matheson, Jr., Chairman
2. The Role of the U.S. Bureau of Land Management in Mine Permitting
Bob Anderson and Kent Hoffman, BLM, Utah State Office
3. Activities of the Technical Advisory Committee
Kim McCarter, University of Utah, Chairman and Professor Mining Engineering
4. Opportunity for Public Comments
5. Discussion of Interim Report

**January 3, 2008
Salt Lake City, Utah
State Capitol Complex**

1. Introduction and Welcome
Scott M. Matheson, Jr., Chairman
2. Mine Safety Testimony
 - Consol Energy Inc. - J. Brett Harvey, President and Chief Executive
 - Arch Coal, Inc. - Gene E. DiClaudio, President, Arch Western Bituminous
 - Interwest Mining Company - Neil Getzelman, President
3. Historical Perspective of Mine Safety in Utah
Joseph A. Main, International Mine Safety Consulting
4. Emergency Response Plan
Ralph Sanich, Safety Manager Interwest Mining Company
5. United Mine Workers of America
Mike Dalpiaz, International Vice President, District 22
6. Opportunity for Public Comment
7. Discussion of Draft Interim Report

**January 11, 2008
Salt Lake City, Utah
State Capitol Complex**

1. Introduction and Welcome
Scott M. Matheson, Jr., Chairman
2. Discussion of Draft Interim Report and Recommendations
4. Other Commission Business

Appendix D. Technical Advisory Committee

Name	Affiliation
Arabasz, Walter	University of Utah
Benzley, Steven	Brigham Young University
Bruno, Arthur	Bruno Engineering Inc.
Calizaya, Felipe	University of Utah
Conaway, Doug	Arch Coal Inc.
Davis, Robert S.	Mine Rescue - Retired
Donovan, James	University of Utah
Einstein, Herbert	Massachusetts Institute of Technology
Evans, Bob	Norwest Corp.
Evans, Dale	College of Eastern Utah
Glines, Dennis	Simplot Phosphates LLC
Guymon, Darwin	College of Eastern Utah
Klobchar, Frank	Kennecott Utah Copper
Mabbutt, Randy	College of Eastern Utah
Madrigal, Rudy	Energy West Mining Co.
Maleki, Hamid	Maleki Technologies
McCarter, Kim	University of Utah
McKenzie, Jeff	Bureau of Land Management
Nelson, Michael	University of Utah
Nielsen, Garth	Interwest Mining Co.
Olsen, Rick	BODEC, Inc.
Oviatt, Warren	Energy West Mining Co.
Pariseau, William	University of Utah
Pollastro, Carl	Interwest Mining Co.
Sanich, Ralph	Interwest Mining Co.
Semborski, Chuck	Interwest Mining Co.
Tatton, Randy	Mining Health & Safety Solutions
Tuttle, Kevin	Energy West Mining Co.

Appendix E. Commissioners' Statements

Commissioners were invited to submit individual statements, understanding that such a statement would reflect the views of the commissioner and not necessarily those of the Commission. David Litvin, President of the Utah Mining Association and member of the Commission, submitted a statement and asked that it be included with this report. It was received on the eve of the printing of the report. At that point, the chairman decided to include a statement as well. They appear in this part of the appendix.

Statement of Scott M. Matheson, Jr.
Chair, Utah Mine Safety Commission

The Utah Mine Safety Commission Report is a consensus document. Behind that consensus is a lot of hard work based on information from many sources. A few comments about reaching that consensus might be helpful to the report's readers.

First, members of the Commission do not represent one or two different perspectives. Each of the eight Commissioners developed his or her own views, and the consensus we achieved was not always easily reached. When the 45 recommendations were adopted, most of them received strong unanimous support. As for others, some Commissioners strongly supported them and others harbored misgivings. But a sense of practical compromise and commitment to improving coal mine safety in Utah forged consensus.

Second, the Commission studied a wide range of issues. One of them was state mine inspection, but the Commission devoted significant time to many other important areas. They include a state coal safety ombudsman, independent review of roof control mining plans, safety research, seismic monitoring improvements, safety training programs, improved state safety certification of miners, and emergency response protocols.

Third, the Commission's information on state safety inspection was not one-sided. The many industry speakers who appeared before the Commission were opposed to state inspection, and they made some good points. However, the rest of the record was more balanced. For example, Professor Robert Ferriter from the Colorado School of Mines, in answers to a Commission questionnaire submitted to him by Senator Hatch, explained the benefits of state inspection. So did leading MSHA officials, as well as Mike Dalpiaz of the United Mine Workers, who also testified that many Utah coal miners were reluctant or intimidated to appear before the Commission and give their views. The Chair of the Commission's Technical Advisory Committee, Professor Kim McCarter, suggested a potential state role in the independent review of roof control mining

plans for unusually challenging mining conditions if certain technical and procedural issues can be resolved. The Commission, through law student research, received helpful information on other states' programs.

Fourth, as Chair, I tried to keep issues on the table, to conduct an open process, and to keep an open mind. My goal for the Commission was to study the issues and then to propose practical and constructive steps that would lead to greater safety in Utah coal mines. I think the Commission has succeeded. It is now up to the policy-makers, the Governor and the Legislature, to move these steps forward. In that respect, I would like in the balance of this statement to share my views on immediate priorities, most of which are consistent with the Commission's recommendations.

The Governor asked the Commission to study the role of the state in coal mine safety, accident prevention, and accident response. In the aftermath of the Crandall Canyon tragedy, the Governor asked us to answer this question: is the state doing everything it should to promote mine safety? I think the answer is no.

I came to this study with the traditional Utah's skepticism of exclusive federal regulatory control over local economic activity and working conditions. The Commission confronted the unusual circumstance in Utah coal mining where the state not only lost its role in trying to make those working conditions safer but also willingly turned it over entirely to the federal government. We have learned that the mining conditions at issue are different in Utah compared to anywhere else. We have further learned that our state does about as little as any other state to promote safety in coal mining. We were asked to assess this situation in light of nine people dying in a horrible coal mine tragedy. And we were asked what the state can do to improve safety for coal miners in an industry that will continue to provide jobs for families in Utah's coal country and to supply the state's energy needs.

First, the state should establish an Office of Coal Mine Safety because we need leadership, efficiency, and accountability in implementing coal safety measures, including those recommended by this Commission. Dispersing the

measures we are recommending among multiple state agencies is not only ineffective but potentially wasteful of taxpayer dollars.

Second, the state and MSHA should initiate an innovative state-federal partnership for approximately the next 12 months and perhaps longer. This Utah-MSHA partnership will enable state officials to participate in the inspection and the mine plan approval processes, learn firsthand the safety steps MSHA has taken since the Crandall Canyon tragedy, and determine how the state can reinforce and supplement – not duplicate – MSHA’s safety efforts in Utah’s mines. This collaboration should enhance safety in the short run and answer whether a continued partnership or a separate state inspection agency would be best for the long run, in either case achieving the benefits of the “additional pair of eyes” MSHA officials have promoted. I believe this approach is more sound and responsible than reflexive support for or opposition to a state inspection agency. I have explored this approach with MSHA officials, who have responded positively to the partnership idea.

Third, I think the Legislature should seek input on a state inspection agency from a larger and more diverse source than our Commission. The Commission received evidence on both the strengths and weaknesses of MSHA, but we are not and never were adequately staffed to make a thorough assessment of MSHA operations in Utah. The Legislature should determine whether a state agency could effectively supplement rather than duplicate federal efforts, in part by implementing a risk-based approach to focus attention on factors such as safety record, depth of cover, bump or bounce history, and gas levels. Although I think a state-federal partnership will be more efficient, effective, and creative in the short run rather than trying to jump-start a state inspection agency, the state’s policy-makers should become more actively engaged in this dialogue.

Fourth, the state should immediately institute a Coal Mine Safety Ombudsman alert system. This system would allow any person, especially miners, an opportunity to report any safety concerns through all available communication channels. To encourage candor, there would be strict legal

protections that guarantee the privacy and confidentiality of the person making the report. The Ombudsman would investigate and, when appropriate, act on such reports by taking concerns to any private or public person or entity, including MSHA and coal operators, who can address the concerns.

Fifth, the state should implement an independent technical review process for mining plans that propose operations under unusually challenging conditions in Utah, provided further consideration by technical advisors can develop workable criteria and efficient procedures to trigger such a review. We know enough about the Crandall Canyon experience that mine plan approval was the critical oversight process in addressing the safety of the barrier pillar mining operations. If the technical issues can be addressed, it is incumbent on the state to assure the miners and their families that objective and independent scrutiny of the proposed mining plan has occurred.

Sixth, the state should support the seismic monitoring proposals from this Commission and its Technical Advisory Committee. We have a unique opportunity to move toward individual mine seismicity monitoring and eventually have the advanced tools for situational awareness and risk assessment that have been in place at underground coal mines in other countries for years.

Finally, the research, education, training, and certification proposals in the report are critical to meet the immediate workforce safety needs and long term employment and safety issues in the Utah coal mining industry. They deserve the Legislature's serious attention and support in the 2008 general session.

I close by thanking Governor Huntsman for the opportunity to work on this important issue and by thanking my fellow Commissioners. I have enjoyed working with all of them and commend them for their public service. Finally, I want to extend my deepest continuing condolences to the families of the victims of the Crandall Canyon tragedy. Your extraordinary losses touched our hearts, and our work on the Utah Mine Safety Commission has been dedicated to you and your loved ones' memories.

**Statement of
Commissioner David A. Litvin
to Accompany the
Utah Mine Safety Commission's Report
to Governor Huntsman**

I. INTRODUCTION

I want to thank Governor Huntsman for my appointment to the Utah Coal Mine Safety Commission ("Commission") as a representative of Utah's coal mining industry. Personally, I take very seriously the mandate given to the Commission to enhance the safety of Utah's coal mines. Having nearly 30 years of experience in the mining industry, including Vice-President for Health, Safety, and the Environment for Kennecott Corporation and in my current position as President of the Utah Mining Association, I understand first hand the critical importance of mine safety. Working with the other dedicated members of the Commission has been most rewarding, and I particularly want to recognize Chairman Scott Matheson's leadership and diligence throughout all of the Commission's deliberations. He allowed each Commissioner the opportunity to question witnesses, participate fully in Commission discussions, and to express their views regarding the recommendations that were being considered by the Commission.

I believe that through its deliberations, the Commission overall has arrived at an excellent set of recommendations for consideration by the Governor and the Utah State Legislature. Implementation of all or a portion of these recommendations should further enhance safety in Utah's coal mines. One area where it is apparent that the State of Utah can effectively improve mine safety is in the area of additional worker training and education for both coal mine workers and coal mine engineers. It should not be forgotten that ultimately, it is the mine operator and the well-trained mine workers themselves that are responsible for mine safety. Each miner has the right and obligation to himself, his fellow workers, and his family to return home safely from his job every day. The State of Utah can play a significant role in giving mine workers the best possible education and training to ensure that the responsibility for safety is an ongoing reality in all of Utah's coal mines.

One issue that was extensively considered by the Commission as a possible recommendation, and one with respect to which the Commission decided affirmatively not to proceed, was to give the proposed state Office of Coal Mine Safety authority for mine inspection and enforcement activities. Some may wonder if this was the appropriate decision given the Crandall Canyon Mine tragedy that prompted the creation of the Commission. I would like to address in this statement that particular issue in detail below - - why the Commission did not recommend the state be given authority for mine inspections and enforcement - - because, I am convinced that it was indeed the correct decision for the State of Utah to follow - - not only now, but for the future as well.

It was the Commission's mandate to gather information on coal mine safety and to learn from experts familiar with Utah's coal mining industry whether the state's role should be increased to further enhance mine safety. The Commission received testimony and information from a wide variety of well qualified experts from the mining industry, from college professors, MSHA and state officials, mine safety trainers, mine operators, union leaders, and experienced mine workers themselves. Together, this large group of experts represented hundreds of years of experience not only in the Utah mining industry, but other states as well, from all different backgrounds and perspectives. Considering such extensive and diverse experts, the Commission found it highly persuasive that not *one* of these witnesses presented compelling evidence to support the creation of a new state office with authority to inspect and enforce mining regulations. The vast majority of the witnesses expressed clear reservations about the need, or effectiveness, of creating a separate state office to inspect and enforce mine safety regulations for Utah's coal mines.

Particular comments of some of the experts that testified before the Commission are discussed throughout my statement. A sample of the experts testifying before the Commission include: Emery County Commissioner Gary Kofford; Thomas Faddies, Assistant Director over hard rock and industrial minerals for the State of Utah, School and Institutional Trust Lands Administration (39 years of mining experience); Michael Nelson, Professor of Mining Engineering at the University of Utah (25 years of mining experience); Kevin Tuttle, Chairman of the Rocky Mountain Coal Mine Rescue Association (31 years of mining experience); John Kirkham, a leading Utah natural resource attorney (36 years of mining experience); Ray Bridge, Safety Manager for Dugout Canyon Mine (31 years of mining experience); Brett Harvey, CEO of Consol Energy (29 years of mining experience); Gene DiClaudio, President of Canyon Fuel Company LLC (35 years of mining experience); Ralph Sanich, Safety Manager of Interwest Mining Company (30 years of mining experience); and Neil Getzelman, President of Interwest Mining Company; (30 years mining experience). In addition to these experts, miners, their families and community leaders also appeared before the Commission. Overwhelmingly, those testifying before the Commission opposed the creation of a state office with mine safety inspection and enforcement authority. Rather, they uniformly encouraged the state to put its resources into better training and education of mine workers and mining engineers as the best way to enhance safety in Utah's underground coal mines.

II. THE ROLE OF A UTAH STATE OFFICE OF COAL MINE SAFETY

On January 11, 2008, the Commission, in one of its 45 recommendations, recommended that the state establish an Office of Coal Mine Safety (the "OCMS") within the Utah Industrial Commission. As contained in the Recommendations submitted with its report, the Commission supported a role for the OCMS as a contact and coordination office (Recommendations 1, 2 and 3), and a place for information sharing (Recommendation 4), but the Commission expressly did not support a mine inspection and enforcement role for the OCMS. The discussion indicated that the OCMS would consist of only a few people (not more than 2 or 3), and indicated its mandate was to

“maximize” coal mine safety. Chairman Matheson specifically stated for the record that the term “maximizing” was meant to exclude authority for the state OCMS to conduct mine inspections and enforcement. The Commission’s recommendation was based on and supported by the direct testimony, information and statistics presented to the Commission during its hearings. As noted, the bulk of the evidence presented to the Commission by those closely involved in and having experience with the State of Utah’s previous coal mine inspection program were totally against the creation of a state coal mine safety office with inspection and enforcement authority. The Commission agreed.

The creation of the OCMS without mine inspection and enforcement authority is the proper decision for the State of Utah for three key reasons: (1) Utah previously had a mine safety program, and abandoned the program in light of concerns over duplication of jurisdiction between the Federal Mine Safety and Health Administration (“MSHA”) and a state mine safety office with inspection and enforcement authority; (2) the lack of persuasive statistical evidence demonstrating a correlation between the creation of a state office with mine inspection and enforcement authority and increased miner safety; and (3) the availability of better alternatives for the State of Utah, recommended and supported by expert testimony, to further increase mine safety through additional mine worker and mine engineer education and training.

III. THE STATE OF UTAH PREVIOUSLY HAD A MINE SAFETY PROGRAM WITH INSPECTION AND ENFORCEMENT AUTHORITY AND ABANDONED IT

One of the most critical elements of an effective mine safety program is the ability to identify those entities that are responsible in the decision making process. Review and approval of mine plans prior to undertaking mining operations is essential to ensure that mines are designed safely. It is also essential that a single entity be identified as having the responsibility for that review and approval. Similarly, when it comes to enforcement, it is critical that one single chain of command has enforcement responsibility. In the event a mine incident does happen, it is then critical that one entity have the decision making authority over the site of the incident. This does not exclude input from other agencies or entities, but it does clearly fix the decision making responsibility.

In this regard, the role of the State of Utah in the area of mine safety has fluctuated dramatically over time, and usually in direct response to the level of involvement of the federal government. During the years when Utah was still a territory, mine safety was subject to minimal federal standards established by Congress. Once Utah achieved Statehood in 1896, the Utah Legislature created the position of State Coal Mine Inspector which remained until the Utah Industrial Commission was established in 1917. Under both the State Coal Mine Inspector and the Industrial Commission, state standards were adopted to address a variety of issues directed at improving the safety of Utah’s coal mines.

As Congress began to adopt federal legislation to address coal mine safety, the roles of the state and the federal government began to overlap. First, Congress adopted

the Federal Coal Mine Safety Act of 1952. This was later modified to cover all underground mines. In 1969, Congress adopted the first comprehensive federal legislation governing both surface and underground coal mines. The legislation was amended in 1973, and finally in 1977, Congress enacted the Federal Mine Safety and Health Act. This Act expanded federal authority over safety through the Mine Safety and Health Administration, and placed “primacy” for safety matters in all mines in the United States with the federal government. Once this comprehensive program was established at the federal level, the role of the states in mine safety became secondary and of lesser importance.

The federal program did not do away with state safety programs, nor did it give to states the opportunity to establish a state program with “primacy” over mine safety. The pattern of state “primacy,” which has been adopted in many federal environmental laws, was not authorized by Congress for mine safety. The federal government through MSHA retains primacy over mine safety regardless of a state’s involvement. Consequently, the State of Utah’s mine inspection and enforcement program created significant uncertainty, and failed to allocate clear responsibility over certain critical safety issues.

Gradually, the Utah State Mine Safety program began to diminish. In 1987, the Utah Legislature essentially repealed much of the substantive state law; and in 1988, the Utah Legislature effectively put an end to Utah’s mine safety program and instead relied firmly on the federal program administered by MSHA for coal mine safety.

The mine safety regulatory landscape between the federal government and the State of Utah has changed very little in the past twenty years, and concern over duplication of jurisdiction over mine safety remains. The experts involved in the Commission’s hearings testified as to MSHA’s effective regulation, and the unnecessary duplication created by a state office with authority for mine inspection and enforcement. For instance, Mr. Kevin Tuttle, Chairman of the Rocky Mountain Coal Mine Rescue Association, in response to a question about Utah’s involvement with inspections, stated:

“I don’t think we need state inspectors. We have the federal government being mandated to inspect our mines.... Those inspectors are on our property hundreds of times within a year’s time frame. For the state to come in there as a duplicate inspection for something that’s already covered.... I haven’t seen the benefit of a secondary inspection on that.... The federal government does a good job.... These are some very experienced people in their field and they make good inspections.”

Others offered testimony as to the ineffectiveness of the previous Utah state mine inspection program. For example, Mr. Ray Bridge, Safety Manager for Dugout Canyon Mine, when discussing his involvement with the Utah state mine inspector program, stated, “there was not much substance to the program at all. In my opinion, the money would be better spent to put into education and training of the underground coal miners.”

Mr. Kevin Stricklin, the administrator for coal mine safety and health for MSHA's headquarters office in Arlington, Virginia, said in reference to working with the state mine safety agency in West Virginia, "The State of West Virginia, after the Sago and Aracoma tragedies, implemented their own plans, and we're running into a couple of snafu's with that, quite frankly...basically it makes it a lot more, we feel, easier if we all work together rather than having two separate plans."

The elimination of the possible duplication of jurisdiction and the identification of a single entity with both responsibility and authority for decision-making were essential considerations by the Utah Legislature in eliminating the role of Utah's Industrial Commission in mine safety in 1988. In addition, there was some concern about the state's potential liability in the case of a mine accident if the state had responsibility for mine inspection and enforcement. Those considerations remain relevant today, and weigh strongly against the creation of a State of Utah mine safety office with mine inspection and enforcement authority.

IV. IMPACT OF A STATE AGENCY ON COAL MINE SAFETY

A. No Compelling Evidence of Increased Mine Worker Safety Benefits for States with State Mine Safety Programs

The key question that must be considered in light of the added expense and potential for duplication of jurisdiction resulting from the creation of a state mine safety program is: Is mine worker safety benefited by the creation of a state-administered coal mine safety program? Based on historical state by state mine safety statistics over the past 10 years, the answer clearly appears to be "no." The statistics show that there is little to no correlation between improvement in the safety records at mines in states that have state-administered safety programs as compared to those states, such as Utah, that do not. In several of the past 10 years, Utah has had a better safety "all incident rate" than both the national average and most of the states with state-administered mine safety programs. In fact, some states with state-administered programs have a safety "all incident rate" substantially higher than the national average.

During the Commission's hearings, a number of experts provided statistical analysis on coal mine safety. One such statistical analysis was provided by Mr. Ralph Sanich, manager for Health Safety and Training at Interwest Mining Company. The statistics provided by Mr. Sanich, and which are contained in the Commission's report, show that Utah's coal mine safety performance is consistently better than the national average safety incident rate. Furthermore, the statistics show that, in general, states with their own state mine safety programs show no marked improvement in safety.

In addition to the practical ineffectiveness of a state agency, it was further noted by attorney John Kirkham and others, that the federal law, by granting MSHA supremacy, limits and undercuts the ability of any duplicative state mine safety program to be effective.

Mr. Richard Stickler, assistant secretary for the Department of Labor at MSHA, told the Salt Lake Tribune Editorial Board that he favored a state mine safety agency with mine inspection and enforcement authority because, "Two eyes are better than one." However, there is no statistical safety data which justifies this statement. Pennsylvania, where Mr. Stickler ran the state mine safety program, historically has had a worse safety record than Utah for their underground coal operations.

There were some assertions by the press that MSHA was not doing a proper number of, or quality, coal mine inspections. However, testimony before the Commission did not show this to be correct for Utah's coal mines:

Mr. Thomas Faddies, Assistant Director over hard rock and industrial minerals for the State of Utah, School and Institutional Trust Lands Administration, in response to a question about who should be responsible for mine inspection, stated,

"I've worked in both the regulatory agencies and in mine operation in the state...and MSHA was always the agency who was responsible for the regulatory matters on safety on all those properties. And I continue to believe that, that's the way it should be.... It's my experience...that the system works."

Mr. Ray Bridge, testified as to the thoroughness of the MSHA inspections in Utah, stating,

"In our opinion, MSHA does a very, very thorough job in MSHA inspections. Right now to date, the Dugout Canyon Mine has 245 inspection days, with roughly 265 days of the year. I mean we literally have an inspector on the property every day."

By letter submitted to the Commission, Mr. Neil Getzelman and Mr. Gene DiClaudio testified that,

"MSHA inspectors are in our mines frequently.... Energy West's Deer Creek Mine experienced 141 inspection days from January through November 2007. At Arch's three Utah mines, MSHA carried out 590 inspection days during that same time frame."

It is important to note that MSHA has recently hired a significant number of new mine inspectors. In a recent speech to a West Virginia Coal Association Mining Symposium Mr. Stickler reported: "Since July 2006, we have hired 273 coal mine enforcement personnel. Accounting for attrition, we have had a net increase of 177 enforcement personnel, exceeding our goal." The Price, Utah field office of MSHA is expected to be increased from 11 to 17 inspectors to handle Utah's eight operating underground coal mines.

The statistical evidence suggests that there is no clear correlation between an additional state mine safety office and increased miner safety. The testimony regarding the effectiveness of MSHA's mine inspection and enforcement of safety regulations, together with MSHA's recent increase in inspectors in the state, as well as testimony before the Commission regarding the ineffectiveness of other state mine safety agencies, persuaded the Commission that there is no need for a state office merely replicating or overseeing MSHA mine inspections or enforcement. In light of the information presented to the Commission, the creation of a Utah state office with inspection and enforcement authority would simply create unnecessary duplication, confusion for coal operators, and the inefficient use of state resources. The money required to run such an office should be used towards much more efficient means of increasing coal mining safety - - training and education - - as evidenced in the hearings before the Commission.

B. Detrimental Effect of a State Agency on Utah's Coal Mining Industry

As suggested in the hearings before the Commission, not only would the creation of a State of Utah coal mine safety office with mine inspection and enforcement authority likely *not* improve mine safety, but would blur the lines of responsibility between MSHA and the State, resulting in delay, confusion, complication and frustration in the state's coal mining industry. Mr. Kevin Tuttle, Chairman of the Rocky Mountain Coal Mine Rescue Association, testified as to the difficulty that may be added by requiring dual approval for mining plans. He stated,

“I can see this turning into a nightmare trying to get dual approvals on things in dealing with the plans.... I don't want to cause such a burden on the industry that we slow things down and we can't react to improvement and changes in procedures.”

As Mr. Tuttle pointed out, improvements that can benefit miner safety could actually be delayed by requiring the mine plans to be approved by two agencies.

This notion of added complication and frustration was also confirmed by those working in Utah's coal mine industry. Emails and editorials were written by miners, their family members, including the family members of those miners in the Crandall Canyon Mine incident, and others in the mining community, indicating serious concern regarding the creation of an additional state agency for mine safety. Presidents of mining companies testified before the Commission as to the complexities and delays caused by dual federal and state agency oversight. One letter, in particular, from the Presidents of Interwest Mining Company and Arch Western Bituminous Group, dated December 18, 2007, noted that the interpretation of existing federal law has evolved through complex judicial decisions, consisting of hundreds of thousands of pages, which already makes compliance a complex and difficult task to comprehend. Adding an entire second level of regulation at the state level would further compound this problem. As stated, “the learning curve for any new Utah State mine safety agency would be daunting indeed.”

C. Competition Between a State Agency and MSHA for Qualified Personnel

The creation of a state office with coal mine inspection and enforcement authority would likely result in increased competition for qualified workers, detracting from MSHA's ability to maintain a competent workforce. As Mr. John Kirkham pointed out, part of the reason Utah abandoned the state mine safety office in 1988 was the inability to properly staff the office with qualified mine inspectors. Michael Nelson from the University of Utah stated, "MSHA would hire another 150 inspectors tomorrow if they could find qualified, willing people. So, if Utah were to start its own agency, we'd have not only the challenge of how it was to be funded and getting it organized, but where would we find the people?"

Mr. Kevin Stricklin from MSHA also presented the notion that a state agency would have a difficult time competing for mine inspectors, noting the higher salaries the federal government would likely be able to offer. Mr. Kirkham also confirmed this when he pointed out that a contributing factor in deciding to close the previous Utah state mine safety office was the state's inability to compete with the compensation being offered by the federal government.

If the state is unable to compete for the limited number of qualified individuals, problems are created. As noted by Mr. Nelson, "You don't want to create a regulatory agency when you don't have competent people to put in it, because it creates...a tremendous amount of resentment in the industry...." If the state cannot obtain qualified individuals to conduct mine inspections, the office would likely be ineffective.

Even if a Utah coal mine safety office were able to attract qualified individuals, as a result of the shortage in the industry, the individuals would inevitably detract from MSHA's current workforce. And, as pointed out by Mr. DiClaudio, President of Canyon Fuel Company, a state agency would also take these qualified individuals from the private sector. Such a reduction in qualified individuals on the ground level, working in the mines themselves, could prove detrimental to the safety of Utah's coal mines.

V. EFFECTIVE STATE ROLE IN MINE SAFETY THROUGH MINE WORKER TRAINING & EDUCATION

Even though not granted mine inspection and enforcement authority, a State of Utah office for coal mine safety could still play an important role in further increasing coal mine safety. Testimony before the Commission identified several areas in which a state office could effectively assist in coal mine safety. While several alternatives were discussed, the benefits of improvement of mine safety training and education was emphasized repeatedly. For instance, in response to questions regarding how Utah can best be involved in promoting mine safety, the following testimony was provided to the Commission:

Mr. Thomas Faddies testified that, “I don’t want to tell you specifically what to do, but education, training, that’ll improve the system that’s in place now.”

Mr. Tuttle recommended, “education is one of the things that the Governor should focus on. I really don’t think that adding another layer of inspection will improve us.”

Mr. Stricklin, when commenting on the best areas for the state to be involved said, “We feel the greatest areas would be training and the monitoring of training.” He noted that in his experience in dealing with state agencies, those focused on training and education were the most effective.

Mr. Brad King, the state representative for District 69 and the President of Institutional Advancement and Student Services at the College of Eastern Utah, agreed that training is a much more effective way for the state to be involved in mine safety, stating, “We could talk about regulation, but I think plenty of this is being done in other places, that I don’t think it necessarily leads directly to improvements in safety. But technology and training are the two areas that I think we should be concentrating on, because those are areas that can lead to safe practices, which lead to safety.”

Emery County Commissioner Gary Kofford stated, “.... education is probably the best thing you can do to make that miner safe....”

While the Commission learned that Utah’s coal operators use advanced training and technology in the conduct of their operations, a number of the recommendations encourage additional efforts in this regard. The role of the Western Energy Training Center (“WETC”), in Helper, Utah, is emphasized in recommendations 15 through 25, and the resources of the University of Utah and other organizations are mentioned in recommendations 10 and 11 among others. Continued technological advancement will play an important role in the enhancement of mine safety in Utah’s coal mines.

VI. THE RISKS ASSOCIATED WITH DUPLICATION IN MINE INSPECTION AND ENFORCEMENT AUTHORITY

In any mining operation, safety must be the most important value. Why? The single act of striking a match, or improperly hooking up a piece of electrical equipment leading to sparks, or failing to properly maintain a piece of mining equipment can all lead to major mine explosions putting not only a single person at risk, but the entire shift of workers. In addition, the improper design of a mine can lead to ventilation problems or roof failures from excessive stress. Furthermore, as underground mining proceeds to

even deeper depths, additional safety measures are required. It is apparent that both the design and operation of safe coal mines is a complex and extremely important endeavor.

In explaining why the mine operator and each mine worker must be responsible for and accountable for safety rather than a state or federal agency, the following analogy may be helpful:

To drive a car, we train the driver and place the responsibility for safety on each driver and on the manufacturer of the car. The car is to be designed and built to be safe, and the driver must know through training and education how to drive, how to operate and maintain his vehicle, what is safe to do under the traffic and weather conditions of that day, and the laws in the area where he is driving. Policemen are around to observe a driver's behavior and when a driver is observed driving unsafe, the policeman intervenes and gives a safety citation either as a warning or a violation with an associated fine. If unsafe behavior of the driver is repeatedly found to occur, the driver's license can be temporarily or permanently suspended.

Furthermore, how one drives safely at 30 miles per hour is much different than how one drives safely at 65 miles per hour. What is considered safe driving practices in one type of weather may be unsafe in the middle of a major rain shower or ice storm. In addition, one's training needs to be enhanced to drive safely at 65 miles per hour as compared to 30 miles per hour, and one's vehicle must have safer tires, better tire balance, stronger seat belts, etc. Even though you may be driving safely at 30 miles per hour or at 65 miles per hour, when an accident does occur at 65 miles per hour, the chances of a serious injury are higher than at 30 miles per hour.

These same principles apply to mine safety. Mining is an inherently risky occupation that requires a mine to be properly designed, and the workers trained to conduct mining operations safely. The goal of enhanced mine safety can best be achieved by better education and training of mine workers and mining engineers through an overall emphasis on a "culture" of safety in everything that is done.

The role of MSHA is that of the policeman to ensure that what the mine operator and worker are doing is conforming to federal safety regulations and is safe. When this is found not to be so, citations are issued and the unsafe practices corrected.

Now, what if we add a second policeman who tells the driver he has to have different training, or vehicle safety equipment. Maybe the one policeman requires the driver's tire pressure to be 40 lbs, but the second policeman wants 45 lbs; maybe one policeman wants Michelin tires, and the other wants Goodyear; maybe your turn signal will need to be on for 5 seconds prior to turning, the other policeman 10 seconds; and on and on to operate his car differently than the first policeman. What happens? The driver becomes confused, the requirements are duplicated, and the ability of the driver to perform safely impaired. This is exactly what occurs when you have both MSHA and a separate state agency involved directly in mine safety matters.

In addition, a policeman cannot be with a mine operator, mine worker, or driver all the time. This is why a well trained worker or driver is essential for enhanced mine safety.

It is not in the best interest of the mine operator, mine workers, or MSHA officials to intentionally allow any unsafe mining practices to occur because of the severe consequences that can occur from a mine accident: potential loss of lives, damage or loss to multi-billion dollars in equipment, and the potential to lose the entire mineral deposit itself.

Consequently, everything we can do to create a “culture” of safety in Utah’s coal mines through enhanced training and education of mine workers and mining engineers, the safer will be Utah’s coal mining operations.

VII. ADDITIONAL CONSIDERATIONS

As the recommendations of the Commission are considered by the Governor and the Utah Legislature, it is important to consider two additional factors.

First, mining carries a special public burden when it comes to safety. In the State of Utah we recently experienced a tragedy of a magnitude similar to the Crandall Canyon incident involving a bus accident that resulted in a substantial loss of nine lives. We have not heard anything with regard to the establishment of a Governor’s commission to investigate that matter. We hear in the news of airplane accidents around the world that take many more lives than were taken in mining related accidents in the United States in recent years, but no state commission is created to investigate whether there should be a state agency regarding commercial airline safety. The mining industry in the United States has significantly improved its safety record in recent years despite the occurrence of several tragic and unacceptable incidents. Mining is not among the most dangerous industries in the United States, and when compared to mining industries in some other countries in the world - - is much safer. However, as expressed to the Commission by Brett Harvey, CEO of Consol Energy, the only acceptable goal for the coal mining industry is ZERO accidents. The mining industry recognizes its unique position in this regard and is striving to achieve zero accidents, and the State of Utah’s assistance in achieving safer coal mines - - where the state can be effective - - is most welcomed.

Second, Utah depends on its coal mining industry as a vital source of energy to support its vibrant economy. Many areas of the state have been declared off limits to coal mine development, not the least of which is the Grand Staircase-Escalante National Monument where over 9 billion tons of recoverable coal is available at depths of only 500 to 1,500 feet, which represents 65% of Utah’s remaining coal reserves. The failure to allow responsible, environmentally sensitive underground mining in these areas has resulted in forcing the existing mines to go deeper and deeper into the earth to satisfy the state’s need for coal. Utah’s mines are among the deepest, if not the deepest in the United States, mining in some cases at depths of over 3,000 feet. This has resulted in some of the unique and challenging higher risk mining conditions being experienced

today by Utah's coal mining industry. Among the responsible state actions that could be taken to improve coal mine safety would be to insure that those areas of the state where economically viable and environmentally responsible coal mining can take place are open to coal mine development. Through these policies, the State of Utah has consciously made a decision to put Utah's mining industry workers at a greater risk of injury while more shallow and accessible coal is being put off limits for responsible development.

VIII. CONCLUSION

I would be remiss if I failed to address the unstated assertion heard over and over again after the Crandall Canyon mine accident: "Mine operators intentionally sacrifice safety in order to make more profit." Let me ask this single question in response: Did Bob Murray and Utah American Energy benefit in any way whatsoever from what happened at the Crandall Canyon Mine? Of course not. There are no winners in the aftermath of a mine accident - - not the mine owner, the mine operator, the workers, nor MSHA. If the State of Utah is involved in mine inspection and enforcement, neither would the state benefit. The answer in a nutshell to enhance mine safety in Utah's coal mines is to promote additional mine worker and mine engineer training and education, as opposed to another agency merely duplicating MSHA's responsibilities.

In sum, there are ways for the state to be effectively involved in creating a safer coal mining industry in Utah. From the testimony presented to the Commission, it is clear that the coal mining industry in each state is different. What might be good in one state will not necessarily be good for another. While it is not the purpose of my statement to discuss alternative actions, the experts are in agreement that there are much more effective alternatives for the state to increase mine safety than the creation of a state office with inspection and enforcement authority.

As a Commission, we heard hundreds of hours of testimony regarding coal mine safety in the State of Utah. We were pleased with the quality and experience of the experts who took the time to present their opinions and analysis. After having reviewed the vast amounts of testimony, the Commission is confident in its recommendation not to pursue the creation of the Office of Coal Mine Safety with inspection and enforcement authority for the State of Utah. As discussed above, no expert provided compelling evidence to support state mine inspection and enforcement authority, and nearly all cited numerous drawbacks to the creation of such an agency - - including the possibility of actually leading to confusion and the worsening of safety in Utah's coal mines. Furthermore, historical statistical safety analysis failed to support a direct correlation between the creation of a state-administered mine safety agency and increased mine safety.

Given the amount of expert testimony opposed to such a state agency with inspection and enforcement authority, as well as the lack of statistical support, I believe, as did the majority of the other members of the Commission, that the State of Utah has

more viable alternatives to enhance mine safety: mine worker and mine engineer training and education.

Respectfully submitted,

David A. Litvin,
Commissioner, Utah Mine Safety Commission
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