

THE STATE OF UTAH’S ROLE IN COAL MINE SAFETY: FEDERALISM CONSIDERATIONS

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INTRODUCTION

Coal mining in Utah is different from any other state.¹ The mines are deeper underground, the coal is stronger, and the overburden is less predictable—all leading to bounce-prone conditions that present serious safety challenges. And yet, the State of Utah has one of the most limited coal mine safety programs of any coal mining state. The Crandall Canyon Mine disaster of August 2007 forced the state to reassess its policies. This article addresses the policy issues based upon the work of the Utah Mine Safety Commission and considerations of federalism. It calls on the state to explore strategies that would advance coal mine safety in Utah.

I. BACKGROUND

A. *Tragedy in Utah Coal Mines*

On May 1, 1900, an explosion killed 200 miners at the Pleasant Valley Company’s Winter Quarters Mine Number Four about one mile west of Scofield in Carbon County, Utah. The blast tore apart victims’ bodies and burned them beyond identification. Others died from carbon monoxide poisoning that followed the explosion. State officials appealed nationwide for survivor assistance. Scofield was

* © 2009 Scott M. Matheson, Jr., Professor of Law, University of Utah S.J. Quinney College of Law. I wish to thank Governor Jon M. Huntsman, Jr., for asking me to chair the Utah Mine Safety Commission following the tragedy at the Crandall Canyon Mine in August 2007. Thank you to my fellow commissioners—former U.S. Senator Jake Garn, former Utah State Senator Mike Dmitrich, Mayor Hilary Gordon, David Litvin, State Representative Kay McIff, Dennis O’Dell, and Mayor Joe Piccolo—and everyone who participated in the Commission’s work, including John Baza, Director of the Utah Division of Oil, Gas and Mining, who served as executive secretary, and his staff. Special thanks to Jim Allen, who, as Assistant Attorney General and the Patrick O’Hara Fellow, was instrumental in drafting the UMSC report and in helping with this article. I appreciate the following for reviewing earlier drafts: Alan Hennebold, Davitt McAteer, Michael K. McCarter, and Michael G. Nelson. I am grateful to Bentley Mitchell for research assistance, to Andrew Morgan for editorial work, and to the staff of this journal for cite checking. Thank you as well for support from the Excellence in Teaching and Research Fund of the S.J. Quinney College of Law.

¹ “There’s a uniqueness here that I don’t think is anywhere else in the United States, maybe anywhere else in the world.” Kevin Stricklin, MSHA Administrator for Coal Mine Safety and Health, *quoted in* Robert Gehrke & Matt Canham, *Feds To Scrutinize Safety At All Deep Mines in U.S.*, S.L. TRIB., Aug. 30, 2007, at A1.

then the worst disaster in American coal mine history and is still the worst in Utah history.²

At that time, no federal coal mine safety program applied to the states. Utah's program was modest, and the state coal mine inspector lacked direct enforcement authority. The Utah Legislature enacted stronger measures in 1901 in response to the Scofield disaster, including new rules for dust control, explosives, ventilation, and supervision. However, the new law also reduced fines, covered only large mines, and lacked effective enforcement.³

Forty days before the Scofield explosion, a significant blast at a nearby empty Castle Dale mine forewarned the looming disaster.⁴ Similarly, five months before the recent Crandall Canyon disaster, a bounce in the North Barrier Pillar forewarned the calamity to come. On August 6, 2007, a mining-induced bounce caused the South Barrier Pillar at the Crandall Canyon Mine to implode, producing a seismic event.⁵ The collapse trapped six miners almost 2,000 feet under the Wasatch Plateau near Huntington, Utah,⁶ where coal mining commenced in 1875.⁷ Ten days later, three rescuers perished when another bounce collapsed the slowly developing rescue tunnel—the last hope to reach the trapped miners.⁸

As the drama unfolded and the tragedy deepened, questions came fast and furious, and the inevitable investigations commenced. As with all fatal coal mining accidents, the federal Mine Health and Safety Administration (MSHA) quickly assembled the official investigation team. The Secretary of Labor also ordered an outside review of MSHA's performance. U.S. Senate and House committees held hearings and launched investigations.⁹ Families of the victims retained counsel to

² See Allan Kent Powell, *Tragedy at Scofield*, 41 UTAH HISTORICAL QUARTERLY 182 (Spring 1973); JAMES WHITESIDE, REGULATING DANGER 69 (1990); see generally J.W. DILLEY, HISTORY OF THE SCOFIELD MINE DISASTER (1900).

³ See WHITESIDE, *supra* note 2, at 69-71.

⁴ See Powell, *supra* note 2, at 183. The Castle Gate Mine had adopted a practice that would have protected the miners at Scofield—removing miners from the mine when shooting off explosive charges. See Allan Kent Powell, *Coal Industry*, in FROM THE GROUND UP: THE HISTORY OF MINING IN UTAH 126, 130 (Colleen Whitely ed., 2006).

⁵ See James C. Pechmann, Walter J. Arabasz, Kris L. Pankow & Relu Burlacu, *Seismological Report on the 6 August 2007 Crandall Canyon Mine Collapse in Utah*, 79 SEISMOLOGICAL RESEARCH LETTERS 620 (Sept./Oct. 2008); Patty Henetz & Sheena McFarland, *Scientists: Collapse Caused Tremor*, S.L. TRIB., Aug. 8, 2007, at A7.

⁶ See Martin Stolz, *Six Trapped After Collapse in a Utah Coal Mine*, N.Y. Times, Aug. 7, 2007, at A10.

⁷ See Helen Z. Papanikolas, *Utah's Coal Lands: A Vital Example of How America Became a Great Nation*, 43 UTAH HISTORICAL QUARTERLY 105, 108 (Spring 1975).

⁸ See Mike Gorrell, *After Deadly Cave-in, Rescue Effort Depends On Borehole, Safety Plan*, S.L. TRIB., Aug. 18, 2007, at A1.

⁹ See Testimony of Richard A. Gates, MSHA Coal Mine Safety and Health, District 11 Manager and Crandall Canyon Investigation Leader, MSHA, UMSC Hearing, Nov. 20, 2007, at 134-35; Testimony of Ed Clair, Associate Solicitor for Mine Safety, Department of Labor, UMSC Hearing, Nov. 20, 2007, at 136-37. To access the testimony cited from UMSC hearings in this article, the audio record is available at <http://minesafetycommission.utah.gov/Meetings.htm> (last visited Dec. 11, 2008), and transcripts can be reviewed at the Utah Division of Oil, Gas and Mining, 1594 West North Temple, Salt Lake City, Utah. Please note that no transcript of the September 10, 2007 meeting was prepared, but the audio and minutes of that meeting can be accessed at the aforementioned web site.

explore tort claims. Much of the investigative efforts focused on the development, approval, and monitoring of the Crandall Canyon Mine roof control plan, which was supposed to secure the stability of the roof and walls of the mine during mining activity.¹⁰

Since Scofield, another 300 individuals have died in Utah coal mine disasters. Questions persist to this day whether the State of Utah could and should do more to secure the safety of Utah's coal miners.

B. Utah Mine Safety Commission

On August 27, 2007, Governor Jon M. Huntsman, Jr., issued an executive order to establish the Utah Mine Safety Commission (UMSC).¹¹ He asked the UMSC to review the role of the State of Utah in the areas of mine safety, accident prevention, and accident response. He did not ask the Commission to investigate the cause(s) of the disaster or to determine fault for its occurrence, but he did ask for consideration of what happened at Crandall Canyon in assessing the state's role in mine safety. Of all the investigations and reviews of the Crandall Canyon tragedy, the UMSC was the only one that focused on the role of state government.

The UMSC conducted public hearings and received presentations from miners, mine company officials, union leaders, community members, federal and state land managers, academic experts, education administrators, MSHA officials, state and local emergency response officials, state certification officials, and many others. It received written comments and collected extensive materials pertinent to its mandate. 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.

On January 23, 2008, the UMSC submitted a report to Governor Huntsman.¹² It contained forty-five recommendations in the areas of state safety oversight, technical and research, education and training, testing and certification, emergency response, and accident investigation. Shortly thereafter, the Utah Legislature passed the Coal Mine Safety Act of 2008,¹³ which implemented some of these recommendations, including establishment of an Office of Coal Mine Safety for the State of Utah.¹⁴

¹⁰ See 30 U.S.C. § 862(a) (2006).

¹¹ Governor's Exec. Order No. 2007-0010 Aug. 27, 2007, available at <http://www.rules.utah.gov/execdocus/2007/ExecDoc130575.htm>, reprinted in Utah Mine Safety Comm'n, Report and Recommendations to Governor Jon M. Huntsman, Jr. (2008) [hereinafter "UMSC Report"].

¹² UMSC Report, *supra* note 11.

¹³ UTAH CODE ANN. §§ 40-2-1.1 – 402 (Supp. 2008).

¹⁴ *Id.* at § 40-2-201.

C. Utah Coal Industry¹⁵

In the past decade, Utah coal mines have produced about 25 million tons of coal and have employed an average of about 1,750 employees each year. Of the twenty-six coal-mining states, Utah ranks thirteenth in coal production. The largest producers—Wyoming, West Virginia, Kentucky, and Pennsylvania—account for sixty-nine percent of the nation's coal. Utah produces 2.1 percent. When the UMSC issued its report in January 2008, nine mines were operating in the state, all underground. In 2007, about eighty-three percent of Utah coal went to electric utilities in Utah and other states. Utah coal fueled eighty-five percent of electricity generated in the state. Although depletion of high-quality resource deposits in the Book Cliffs, Wasatch Plateau, and Emery coal fields points to an estimated forty-five to fifty years of further production, coal mining will remain vital to the economies of Carbon, Emery, and Sevier Counties and to the state as a whole.¹⁶ And as long as coal mining is conducted in Utah, coal mine safety should be the paramount priority.

D. Unique Safety Challenges in Utah Coal Mining

For decades the Rocky Mountain coal mining states experienced higher fatality rates than the national averages.¹⁷ The desert climate in the West and the corresponding low moisture content of coal has contributed to the risk of explosion by generating and suspending high levels of dust in the air. Falling roofs from coal mining produced even more fatal accidents, aided and abetted in the West by unstable overburden of rock and shale covering coal seams. The practice of pulling pillars to recover unmined coal was more prevalent in the West and contributed to unstable roof conditions.¹⁸ In addition to explosions and roof falls, other major causes of fatal coal mining accidents include hazards from powered haulage, machinery, and electrical.¹⁹

Coal mine bounces—also called bumps or bursts—are violent dislocations of the mine workings attributed to severe stress in the surrounding rock. Bounces have been a problem in the U.S. since underground mining began. They are prevalent in the West and especially in Utah. Analysis of MSHA data shows that fifty-five percent of reported bumps in the U.S. occurred in Utah from 1983 to the

¹⁵ This discussion is drawn from information provided to the UMSC from the Utah Geological Survey, Department of Natural Resources, Annual Review and Forecast of Utah Coal Production and Distribution (2008), available at <http://geology.utah.gov/online/c/c-107.pdf> [hereinafter "Utah Coal Report"]. See also UMSC Report, *supra* note 11, at 5-8.

¹⁶ See Jeremiah Stettler, *Despite Tragedies, 'Coal Is What These Two Counties Live For,'* S.L. TRIB., Aug 13, 2007, at A1.

¹⁷ See WHITESIDE, *supra* note 2, at 209.

¹⁸ See *id.* at 205-06.

¹⁹ See National Institute for Occupational Safety and Health (NIOSH), Mine Safety and Health Research, Mining Fatalities, <http://www.cdc.gov/niosh/mining/statistics/pdfs/acfu.pdf> (last visited Dec. 19, 2008).

present.²⁰ One expert indicated that coal field bumps should be anticipated in Utah when mining deeper than about 1200 feet, and the mining plan should be developed accordingly.²¹ Three features of Utah coal mining conditions contribute to this phenomenon.

First, one of the biggest engineering and safety challenges for underground mining in Utah is “deep cover,” which refers to the “overburden” or amount of rock above the area being mined. Underground pressure from the overburden increases as mining operations are conducted further underground.²² Mining engineering professor Michael Nelson explained to the UMSC that coal has a compressive strength of 2000 to 4600 pounds per square inch (psi). The stress is 3600 psi at a deep underground Utah mine such as the 3000-foot Aberdeen Mine in the Book Cliff Mountains.²³

Second, another safety factor in Utah is “strong coal,” which refers to its compressive strength. Strong coal will accumulate significant strain resulting from stress imposed by the overlying strata. It also is more prone to a sudden coal burst that can cause a seismic event.²⁴

Third, a thick and strong roof layer of sandstone rock over the coal seam, which accurately describes the strata in many cases in Central Utah, will eventually fail in less predictable ways than under other conditions and also can cause a seismic event leading to injuries or fatalities.²⁵

Other challenging conditions in Utah include more complex geology and thick seams that are more difficult to mine.²⁶ The bounce-prone conditions call for identifying overstressed pillars and monitoring the development of instability

²⁰ See Joseph C. Zelanko, Supervising Mining Engineer, Office of Technical Support, MSHA, Third Annual International Mining Health and Safety Symposium (July 22, 2008), <http://www.nttc.edu/minesafety/2008/videos/72108session2.asp> (last visited Dec. 11, 2008). See Mike Gorrell, *Murray Energy Wrangles with Feds*, S.L. TRIB., Feb. 7, 2009, at A1 (reporting conflict between MSHA and Murray Energy arising from three bumps at the West Ridge Mine in Carbon County, Utah); Paul Foy, *Mine Shuts Down Again in Safety Spat*, S.L. TRIB., Feb. 16, 2009, at B1 (reporting Murray Energy was disputing MSHA’s shutdown order); Mike Gorrell, *Mine Shutdown Is Ruled Correct*, S.L. TRIB., Feb. 27, 2009, at B1 (administrative judge decides MSHA shutdown order reasonable).

²¹ See Robert L. Ferriter, Director of Mine Safety and Health Program, Colorado School of Mines, Statement submitted to the S. Comm. on Health, Education, Labor and Pensions, Oct. 2, 2007 (on file with author) [hereinafter “Ferriter Statement”].

²² The Crandall Canyon operator shut down operations at the Tower Mine near Price, Utah one of the nation’s deepest coal mines at 2500 to 3000 feet beneath the Book Cliff Mountains. The company announced “unexpected and unusual stress conditions” as the reason for the shutdown on March 28, 2008. MSHA had recently fined the operator \$420,000 for flagrant safety violations at the mine. See Steven Oberbeck & Robert Gehrke, *Safety Fears Shut Down Tower Mine*, S.L. TRIB., Mar. 29, 2008, at A1.

²³ See Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 109.

²⁴ See *id.* at 109-10.

²⁵ See *id.* at 110; Testimony of Mike Dalpiaz, International Vice President, District 22, United Mine Workers of America, UMSC Hearing, Jan. 3, 2008, at 165.

²⁶ See Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 116-18.

above a longwall system.²⁷ Joseph Main, administrator of the United Mine Workers of American Health and Safety Department from 1982 to 2004, told the UMSC that he has “had the opportunity to assess coal mines throughout the U.S., throughout the world” and has “found that the coal fields in the mountainous region of Utah have unique characteristics that require special attention, particularly related to ground control.”²⁸

One of the recognized challenges to safety is that conditions in underground coal mines will continue to degrade rather than improve. Operators will attempt to mine deeper, thinner seams as the available underground coal reserves in Western States like Utah and Colorado are mined out²⁹—“all of the easy coal is gone.”³⁰ The state’s annual review of Utah coal explained that “Utah mines are . . . faced with significant reserve depletion and the hazards of mining at increasing depths of cover.”³¹

Another significant safety challenge is the changing of the guard in coal mining, with the impending retirement of a generation of miners and engineers having vast experience in the industry, including “the miners, equipment operators, electricians, mechanics, the face boss, the mine foreman, assistant mine foreman, the rescue team guys, [and] . . . the inspectors.”³²

E. State Role in Coal Mine Safety

The UMSC’s experience in evaluating the state’s role raised important questions about the benefits of federalism in the context of underground coal mine safety regulation. The purpose of this article is to draw on the UMSC’s work to address how state governments in Utah and other comparable underground coal mining states can contribute to the coal mine safety regulatory process. The issues are addressed from the perspective of the role of federalism in safety regulation where the federal government already has assumed the primary role.

The current coal mine regulatory system follows more than a century of tragedy in the nation’s coal mines. It is largely the product of thousands of miners’ deaths from coal mine accidents leading to hard-won federal safety legislation and

²⁷ See Testimony of Michael K. McCarter, Professor and Chairman of Mining Engineering, University of Utah, UMSC Hearing, Nov. 13, 2007, at 15-17; Ferriter Statement, *supra* note 21.

²⁸ Testimony of Joseph A. Main, International Mine Safety Consulting, UMSC Hearing, Jan. 3, 2008, at 100-01. MSHA inspector William Taylor told the UMSC that liquid and gas hydrocarbons present unique risks in Utah. His remarks on September 10, 2007 can be heard at <http://minesafetycommission.utah.gov/meetings/UMSC%20Meeting%2009-102007/Conference.mp3> (no transcript prepared from this meeting).

²⁹ See Frank E. Chase, Christopher Mark, Keith A. Heasley, NIOSH, “Deep Cover Pillar Extraction in the U.S. Coalfields,” Aug. 2002, <http://www.cdc.gov/niosh/mining/pubs/pubreference/outputid162.htm> (last visited Feb. 25, 2009); Mike Gorrell, *Accessible Coal Getting Scarce*, S.L. TRIB., Dec. 11, 2007, at C1.

³⁰ Testimony of Mike Dalpiaz, International Vice President, District 22, United Mine Workers of America, UMSC Hearing, Jan. 3, 2008, at 164.

³¹ Utah Coal Report, *supra* note 15, at 1.

³² Testimony of Joseph A. Main, International Mine Safety Consulting, UMSC Hearing, Jan. 3, 2008, at 113. See also *infra* note 304.

regulations. The regulatory structure consists of federal promulgation and enforcement of safety regulations through MSHA. Federal law allows states to supplement federal regulation as long as state regulation is consistent with or more stringent than federal standards.³³

The existing federal regulatory structure has been in place for over thirty years. Although federal mine safety law has been amended and legislative reforms are pending, there is no significant effort to overhaul the essential framework. Particularly for the states, this means that safety improvements will come through adjustments to the current regulatory model.

Every coal mining state has its own history of coal mine accidents and state participation in coal mine safety regulation. Indeed, for the past thirty years, Utah, where almost 500 miners have died in the coal mines since 1900, has done less than other coal mining states to address safety. Starting in the 1970s, the state mostly abandoned coal mine safety regulation, leaving primary and almost exclusive oversight to MSHA and the federal government. Other states, especially in the West, also scaled back as the federal government took the primary role in coal mine safety regulation.³⁴

The abandonment of safety regulation in Utah has gone too far and should be reassessed consistent with Governor Huntsman's suggestion that "the state should play a stepped-up role."³⁵ The advantages of a state role to complement the federal regulatory system may outweigh the disadvantages in the context of underground coal mine safety. State policymakers should be open to this possibility. This position is based in part on the fact that coal mining conditions in Utah are significantly different from most other coal mining states.

Since World War II, the majority of coal mining in the West has been conducted as surface mining. The exception is Utah, where underground mining still predominates.³⁶ Indeed, deep longwall mining in the U.S. is done only in Utah, Alabama, and, to a limited extent, in Colorado.³⁷ Moreover, although there are bounce-prone mines in Virginia and West Virginia, no other underground mining in the United States occurs at deeper levels and in more bounce-prone conditions than in Utah.³⁸

The State of Utah can bring special understanding to make those conditions safer and also provide an independent safeguard to buttress a federal regulatory system that has proven to be far from failsafe. In particular, the state can offer an important safety supplement through inspection, mine plan approval, training, research, and other roles discussed in this article. These functions can be

³³ 30 U.S.C. § 955 (2006).

³⁴ See WHITESIDE, *supra* note 2, at 199-201.

³⁵ Testimony of Governor Jon M. Huntsman, Jr., UMSC Hearing, Nov. 13, 2007, at 90.

³⁶ See WHITESIDE, *supra* note 2, at 176, 209.

³⁷ See Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 116.

³⁸ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 33, 44-45.

accomplished through a cooperative working relationship among the state, MSHA, and the mine operators.

II. UNDERGROUND COAL MINE SAFETY REGULATION

A. *States as the Initial Primary Regulators*

The history of coal mine safety regulation in the United States has followed a pattern of legislative responses to coal mine disasters. At a time when health and safety were generally recognized as the province of the state police power, the states took the early lead. Pennsylvania passed the first coal mine inspection act in 1869, and other states followed suit through the end of the century as catastrophic explosions and mine fires mounted.³⁹ State legislation in the late nineteenth century eventually established regular inspections and standards for ventilation and other key aspects of mining operations, though some states did not even go this far.⁴⁰ All such legislation proved inadequate.⁴¹

Congress passed the first federal mine safety law in 1891, providing for inspection of mines only in the territories.⁴² By the beginning of the twentieth century, all coal states had laws regulating coal mining, but these laws failed to address the major causes of coal mining deaths or the underlying working conditions.⁴³ Industry and state legislatures feared strong regulation would inhibit economic growth and create a competitive disadvantage in their states.⁴⁴ The laws did not cover small mines,⁴⁵ state enforcement agencies were thinly staffed, enforcement procedures were unwieldy, and penalties were modest.⁴⁶

As railroads and later independent operators came to dominate the industry, they exercised commensurate political power over state governments and the communities in which they operated. State governments, in turn, protected the industry's interests to further economic growth.⁴⁷ For example, in the early twentieth century coal accident investigations were notorious for absolving operators of responsibility,⁴⁸ and state officials intervened on behalf of operators when miners struck for union recognition.⁴⁹ Tort claims floundered on the common law doctrines of assumption of risk, the fellow-servant rule, and contributory

³⁹ See OCCUPATIONAL SAFETY AND HEALTH LAW 648 (Randy S. Rabinowitz ed., 2000) [hereinafter "OSHL"].

⁴⁰ See WHITESIDE, *supra* note 2, at 57-69; DAVID A. WOLFF, INDUSTRIALIZING THE ROCKIES 173-74, 189-90 (2003).

⁴¹ See WILLIAM GRAEBNER, COAL-MINING SAFETY IN THE PROGRESSIVE PERIOD 1-7 (1976).

⁴² An Act for the Protection of the Lives of Miners in the Territories, Ch. 564, 26 Stat. 1104 (1891).

⁴³ See WHITESIDE, *supra* note 2, at xiii, 55.

⁴⁴ See *id.* at 55-56.

⁴⁵ See *id.* at 60.

⁴⁶ See *id.* at 61.

⁴⁷ See *id.* at 1-31; Priscilla Long, WHERE THE SUN NEVER SHINES: A HISTORY OF AMERICA'S BLOODY COAL INDUSTRY 172-91 (1989); see generally Wolff, *supra* note 40.

⁴⁸ See WHITESIDE, *supra* note 2, at 22, 85-86.

⁴⁹ See *id.* at 26.

negligence,⁵⁰ but courts and legislators started to reform the law in favor of the miner in the first decades of the twentieth century.⁵¹

In Utah and the West, the early laws did not prevent explosions and failed to deal with other major causes of coal mining deaths and injuries.⁵² Operators and mine inspectors generally believed that miners were responsible for their own safety, that deaths were bound to happen in a dangerous industry, and that miner negligence caused many of the accidents.⁵³ The operators' payment systems, which were based on production, and their employment of inexperienced and inexpensive labor contributed to this perception.⁵⁴ After the Scofield explosion, Utah's mine inspector reportedly accused the operator of negligence and failure to sprinkle the mines adequately. He later denied having made the allegation. Investigations by a coroner's jury, the mine inspector, and the state chemist all absolved the operator of guilt.⁵⁵

During the first part of the twentieth century, mine accident deaths and injuries increased substantially. The worst year of coal mine deaths in American history, 3242 in 1907,⁵⁶ including the Monongah, West Virginia disaster that killed 362,⁵⁷ led Congress to pass, over mining state opposition, the Organic Mine Safety Act of 1910. The Act created the Bureau of Mines in the Department of the Interior.⁵⁸ But this initial federal role was confined to researching disaster prevention and developing safety guidelines and educational programs, not inspection and enforcement.⁵⁹ The federal government largely deferred to the states for safety regulation.⁶⁰

Coal operators began to see the connection between safety and cost efficiency, labor unrest and the Progressive movement pushed for more protection, and state legislatures expanded safety regulation as interest developed for uniform state legislation.⁶¹ However, operators continued to resist a larger regulatory role and played a dominant role in shaping new legislation. Consequently, the new measures and operators did not effectively address fundamental safety issues. Laws in the Western States, for example, failed to prevent major explosions and failed to

⁵⁰ See Thomas G. Alexander, *Generating Wealth from the Earth 1847-2000*, in *FROM THE GROUND UP – THE HISTORY OF MINING IN UTAH* 45-46 (Colleen Whitley ed., 2006).

⁵¹ See WHITESIDE, *supra* note 2, at 86-92.

⁵² See *id.* at 72.

⁵³ See *id.* at 77-79; Papanikolas, *supra* note 7, at 116-17.

⁵⁴ See WHITESIDE, *supra* note 2, at 81-83.

⁵⁵ See Powell, *supra* note 2, at 192.

⁵⁶ MSHA, Coal Fatalities for 1900 through 2007 <http://www.msha.gov/stats/centurystats/coalstats.asp> (last visited Dec. 18, 2008) [hereinafter "MSHA, Coal Fatalities"]. Note that MSHA started to include office workers in the employment numbers in 1973.

⁵⁷ See generally DAVITT MCATEER, *MONONGAH: THE TRAGIC STORY OF THE WORST INDUSTRIAL ACCIDENT IN U.S. HISTORY* (2007).

⁵⁸ To Establish in the Dept. of Interior a Bureau of Mines, Ch. 240, 36 Stat. 369 (1910). See MCATEER, *supra* note 57, at 253-59.

⁵⁹ See OSHL, *supra* note 39, at 649; MCATEER, *supra* note 57, at 258-59.

⁶⁰ See GRAEBNER, *supra* note 41, at 9, 171.

⁶¹ See *id.* at 1, 5, 10, 100-11.

address the causes of the majority of accidents.⁶² As in earlier years, state inspection programs were understaffed and encountered substantial resistance to safety enforcement.⁶³

The post–World War I period saw declines in demand for and production of coal, continued high death and injury rates, more reliance on machine-produced coal, and labor strife. These factors eventually led to the unionization of more mines under the United Mine Workers of America. Both operators and miners largely welcomed the advent of workers' compensation laws to avoid the expense and uncertainty of lawsuits. Despite more awareness of safety problems and some improvements in safety policies and practices, no significant reduction in fatality rates occurred.⁶⁴ Although disasters from gas and dust explosions abated, the more pervasive but less dramatic challenges of deaths from roof falls, haulage, and electrical hazards were not addressed.⁶⁵ Despite state attempts to improve safety laws, operator and miner resistance to safety standards and inadequate state funding and enforcement set the stage for the federal government to begin its takeover of coal mining safety regulation.⁶⁶

B. Federal Takeover as the Primary Regulator

More coal mine disasters prompted Congress to enact the Coal Mine Inspection and Investigation Act in 1941. The committee report accompanying this legislation said that there was “no common standard of safety among the States, no common regulations, and, in addition to this, a lack of uniform enforcement of such regulations, as are in effect.”⁶⁷ The 1941 Act provided for annual mine inspections by the Bureau of Mines but not for mandatory standards or compliance enforcement. Without regulatory or enforcement provisions, this law would only supplement and not supplant state coal mine inspection efforts.⁶⁸

This step and ensuing ones leading to a federal takeover of coal mine safety regulation came in spite of resistance from both industry and state governments,⁶⁹ including the Utah State Industrial Commission, all of which claimed that federal inspection would duplicate state efforts.⁷⁰ Unsafe working conditions contributed to more than 6500 mine fatalities in the U.S. between 1941 and 1945, including 123 in Utah,⁷¹ and highlighted the inadequacy of the modest state and federal safety efforts. Increased use of mining and loading machinery contributed to

⁶² See WHITESIDE, *supra* note 2, at 97-114.

⁶³ See GRAEBNER, *supra* note 41, at 5.

⁶⁴ See WHITESIDE, *supra* note 2, at 115-34.

⁶⁵ See GRAEBNER, *supra* note 41, at 6, 43.

⁶⁶ See WHITESIDE, *supra* note 2, at 135-54.

⁶⁷ S. REP. NO. 95-181 at 2, 1977 U.S.C.C.A.N. 3401, 3402 (1977).

⁶⁸ See WHITESIDE, *supra* note 2, at 167.

⁶⁹ See *id.* at xiv, 167-69.

⁷⁰ See *id.* at 169.

⁷¹ See *id.* at 170-72.

deteriorating roofs and made rock and coal falls the leading cause of coal mining deaths.⁷²

After President Truman ordered the Secretary of the Interior to seize control of the mines during the coal strike of 1946, the federal government promulgated the Federal Mine Safety Code to address miners' safety concerns and end the nationwide strike.⁷³ The Code expanded the federal role in mine safety regulation and inspection. It regulated roof control, electricity, and machinery, and it mandated ventilation standards and supervision by state-certified foremen and shot firers.⁷⁴

In 1947, Congress passed a joint resolution asking the Bureau of Mines to inspect coal mines and report Code violations to state agencies. Five years later, following the Franklin Coal Company Mine explosion in Illinois, the Federal Coal Mine Safety Act of 1952 was enacted over state and industry opposition. It authorized federal inspectors to inspect mines and order mine closures for imminent danger or mine operators' non-compliance.⁷⁵ However, the Act did not apply to small mines and failed to address common fatal accidents such as falling rocks and electrical and machinery malfunctions. It recognized that state standards which were more stringent than federal standards would supersede the federal act. State and federal agencies were encouraged to share inspection, research, and other safety duties. The law required joint state-federal inspections.⁷⁶

Despite these measures, coal mine safety failed to improve in the 1950s.⁷⁷ About ninety percent of the causes of death or injury were under the jurisdiction of state laws and the Federal Mine Safety Code.⁷⁸ After mine explosions in 1962 and 1963, President Kennedy formed a task force to study mine fatality causes and to recommend safety improvements. The task force concluded that federal regulation should apply to small, privately-owned mines and that federal inspectors should have power to close mines that violated the 1952 Act. Congress passed legislation in 1966 in response to these recommendations.⁷⁹

The 1968 coal mine explosion in Farmington, West Virginia, which killed seventy-eight miners, led to the Federal Coal Mine Health and Safety Act of 1969,⁸⁰ the strongest and most comprehensive federal mine safety legislation passed up to that time.⁸¹ The Act placed inspection and enforcement authority in the Mine Enforcement and Safety Administration (MESA) in the Department of Interior. It required four inspections each year to enforce more strict safety and

⁷² See *id.* at 173.

⁷³ See *id.* at 177-78; S. REP. NO. 95-181 at 2, 1977 U.S.C.C.A.N. 3401, 3402 (1977).

⁷⁴ 32 C.F.R. pt. 304 (1946).

⁷⁵ Title II - Prevention of Major Disasters in Mines, Pub. L. No. 82-552, 66 Stat. 692 (1952).

⁷⁶ H.R. REP. NO. 82-2368, at 11-33 (1952).

⁷⁷ See OSHL, *supra* note 39, at 651.

⁷⁸ H.R. REP. NO. 91-563, at 3 (1969). See R. Larry Grayson & Bruce Watzman, *History and Overview of Mine Health and Safety*, in MINE HEALTH AND SAFETY MANAGEMENT 1, 4 (Michael Karmis ed., 2001).

⁷⁹ See WHITESIDE, *supra* note 2, at 189-90.

⁸⁰ Federal Coal Mine Health and Safety Act of 1969, Pub. L. No. 91-173, 83 Stat. 742 (1969).

⁸¹ See MCATEER, *supra* note 57, at 262, 269.

health standards. It also gave federal inspectors more enforcement authority and imposed civil fines and criminal liability for willful violations.⁸² Although this Act significantly increased federal responsibility, coal mine disasters during the 1970s revealed its limitations, and pressure for more stringent legislation intensified.⁸³

When the Federal Mine Safety and Health Act was enacted in 1977, the Sagebrush Rebellion was sweeping the Western States, fanning sentiment against federal land management policy and fueling longstanding skepticism about the federal government in general. Nonetheless, once the legislation was passed, rather than insist that states should be significantly responsible for the safety of their coal miners, Western States deferred to federal officials to make the rules and enforce them.

C. The Federal MSHA Regulatory System

The Federal Mine Safety and Health Act of 1977 (Federal Mine Safety Act) established the regulatory framework in place today.⁸⁴ The Act moved mine safety enforcement from the Department of the Interior to the Mine Safety and Health Administration (MSHA) in the Department of Labor.⁸⁵ It directed the Secretary of Labor to promulgate mandatory health and safety standards.⁸⁶ It also established the Federal Mine Safety and Health Review Commission for independent review of MSHA's actions,⁸⁷ thereby separating agency rulemaking and adjudicatory functions.⁸⁸ Building on previous legislation, the Act provided whistle blower protection for miners who report violations, and required miner training and mine rescue teams.

The federal coal mining laws from 1941 to 1977 contemplated federal and state government cooperation on mine inspection, enforcement, research, and training. The 1969 Act was intended to "promote coordination of safety enforcement between the State and Federal Governments,"⁸⁹ and the 1977 Act encouraged state training programs by providing grant support.⁹⁰ But the expanding federal role

⁸² 30 U.S.C. § 819 (2006); see Grayson & Watzman, *supra* note 78, at 4-5.

⁸³ See OSHL, *supra* note 39, at 653-54.

⁸⁴ Federal Mine Safety and Health Amendments Act of 1977, Pub. L. No. 95-164, 91 Stat. 1290 (1977), 30 U.S.C. §§ 801-965 (2006). An overview of MSHA's role and responsibilities was presented to the UMSC on September 10, 2007 by William G. "Bill" Denning, a staff assistant and civil engineer from MSHA's District 9 office in Denver. He also described the MSHA's State Grants program that provides funding to states for education and training. A transcript of this meeting was not prepared, but an audio recording can be accessed at <http://minesafetycommission.utah.gov/meetings/UMSC%20Meeting%2009-102007/Conference.mp3> (last visited Dec. 18, 2008).

⁸⁵ 30 U.S.C. § 961(2006).

⁸⁶ *Id.* § 811.

⁸⁷ *Id.* § 823.

⁸⁸ See George Robert Johnson, Jr., *The Split-Enforcement Model: Some Conclusions from the OSHA and MSHA Experiences*, 39 ADMIN. L. REV. 315 (1987).

⁸⁹ S. REP. NO. 89-1055, at 4 (1966), as reprinted in 1966 U.S.C.C.A.N. 2072, 2075.

⁹⁰ H.R. REP. NO. 95-655, at 61 (1977) (Conf. Rep.), as reprinted in 1977 U.S.C.C.A.N. 3485, 3509.

gave states an incentive to cut back their own regulatory programs.⁹¹ Starting in the 1970s, state inspection activity declined in the western coal states.⁹² This was clearly the case in Utah, where federal control ultimately found the state providing training and certification of miners as the state's remaining role.

The MSHA regulatory scheme depends heavily on government inspection, civil penalties, and criminal sanctions for serious and willful violations.⁹³ Four inspections are required each year for underground mines,⁹⁴ and "spot" inspections are conducted for a variety of compliance issues.⁹⁵ In addition to citations and fines, MSHA has enforcement authority to issue a variety of orders, including withdrawal orders to close all or part of a mine,⁹⁶ and to investigate mine accidents.⁹⁷

MSHA requires operators to adopt comprehensive plans that address specific subjects such as mine ventilation and roof control.⁹⁸ Mandatory safety standards include roof support specifications for the construction and maintenance of mine roofs to ensure safety under the prevailing geological conditions and the mining system to be used at the mine. Roof control plans must be filed with the district manager of the MSHA Coal Mine Health and Safety District where the mine is located.⁹⁹ Mine operators must develop and follow a ground control plan to ensure safe working conditions. Ground control refers to securing the floor, walls, and roof so they do not cave in before they should.¹⁰⁰ The plan also must be filed with the appropriate district office.¹⁰¹

The Secretary of Labor is authorized to direct that any mine operator construct rescue chambers where miners may go in the case of emergency.¹⁰² Two-way communications must be provided between the surface and each landing of main shafts and slopes, and between the surface and each working section of any coal mine that is more than 100 feet from a portal.¹⁰³ The Federal Mine Safety Act extends to independent contractors performing services or construction at a mine.¹⁰⁴ All mines are subject to a single statute administered by MSHA.

In 2006, following the Sago and Aracoma mine disasters in West Virginia and the Darby mine disaster in Kentucky, Congress amended the Federal Mine Safety Act through the Mine Improvement and New Emergency Response Act (MINER

⁹¹ See WHITESIDE, *supra* note 2, at 199.

⁹² See *id.* at 200.

⁹³ 30 U.S.C. § 820 (2006).

⁹⁴ *Id.* § 813(a).

⁹⁵ *Id.* § 813(a), (i).

⁹⁶ *Id.* § 813(j).

⁹⁷ *Id.*

⁹⁸ *Id.* §§ 862(a), 863(a).

⁹⁹ 30 C.F.R. § 75.215 (2008).

¹⁰⁰ See Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 94.

¹⁰¹ 30 C.F.R. §§ 77.1000-1 (2008).

¹⁰² *Id.* § 75.1500.

¹⁰³ *Id.* § 75.1600-1600-2.

¹⁰⁴ 30 U.S.C. § 802(d) (2006).

Act).¹⁰⁵ The Act requires mine operators to develop emergency response plans,¹⁰⁶ install wireless two-way communications and tracking systems between underground and surface personnel, and deploy two certified mine rescue teams within a certain proximity to the mine.¹⁰⁷ It further requires operators to report accidents to MSHA within fifteen minutes of occurrence if the accident causes death or poses a reasonable threat of death.¹⁰⁸

On January 16, 2008, in the wake of the Crandall Canyon Disaster, the House of Representatives passed the Supplemental-Mine Improvement and New Emergency Response Act (S-MINER Act), which, among other things, attempted to strengthen MSHA's power to shut mines that fail to meet health and safety standards.¹⁰⁹ The Senate failed to pass this legislation during the 110th Congress.

Two important points about the federal regulatory system should be noted. First, the other and much broader major federal law regulating workplace safety is the Occupational Safety and Health Act of 1970.¹¹⁰ It shares some common features with the Federal Mine Safety Act: health and safety standards, workplace inspections, civil and criminal penalties, and administrative review by an independent commission.¹¹¹ The most significant difference between the two statutes for purposes of this article is that the Federal Mine Safety Act does not authorize state plans for state enforcement of the federal mine health and safety standards similar to those allowed under the Occupational Safety and Health Act.¹¹² Although the Federal Mine Safety Act established federal regulatory primacy for coal mining, states may enforce their own safety laws and regulations if they are consistent with or more stringent than the Act or MSHA health or safety regulations.¹¹³

Second, the National Institute for Occupational Safety and Health (NIOSH) is an agency of the Centers for Disease Control of the Department of Health and Human Services. Under the Federal Mine Safety Act, NIOSH is responsible for research on miner safety and health,¹¹⁴ a responsibility formerly lodged with the Bureau of Mines. When Congress closed the Bureau of Mines in 1996, it

¹⁰⁵ Mine Improvement and New Emergency Response Act of 2006 (MINER Act), Pub. L. No. 109-236, 120 Stat. 493.

¹⁰⁶ 30 U.S.C. § 876(b) (2006).

¹⁰⁷ *Id.* § 825(e)(2).

¹⁰⁸ *Id.* § 813(j).

¹⁰⁹ H.R. 2768, 110th Cong. (2008), available at <http://thomas.loc.gov/cgi-bin/query/z?c110:H.R.2768.RFS>.

¹¹⁰ 29 U.S.C. §§ 651-700 (2006).

¹¹¹ See OSHL, *supra* note 39, at 761.

¹¹² 29 U.S.C. § 667 (2006). See Alison D. Morantz, *Mining Mining Data: Bringing Empirical Analysis to Bear on the Regulation of Safety and Health in U.S. Mining*, 111 W. VA. L. REV. 45, 47-48 (2008).

¹¹³ 30 U.S.C. § 955 (2006). The Senate committee report accompanying the 1977 Act explained that "any State law providing for health and safety standards applicable to any mine now covered by this Act and that (1) are more stringent than Federal law, or (2) apply to any area not covered by Federal law, shall not be held to be in conflict with this Act." S. REP. NO. 95-181, at 81 (1977), reprinted in 1977 U.S.C.C.A.N. 3401, 3480.

¹¹⁴ 30 U.S.C. § 951(b) (2006).

reassigned the Bureau's Spokane and Pittsburgh labs to NIOSH. Several presenters told the USMC that the Bureau of Mines closure reduced research on safety and technology issues in general and research applicable to Utah's mines in particular.¹¹⁵

D. Other Federal and State Agencies and Coal Mining

Although MSHA is the lead regulatory agency regarding mine safety, several other federal and state agencies regulate various aspects of coal mining. The agencies that do not regulate underground coal mine safety nonetheless regard themselves as "cooperating agenc[ies]" regarding coal mining activities.¹¹⁶ Brief reference to their basic roles develops the context for this article's ensuing discussion. Starting with the federal land management agencies, the U.S. Forest Service (USFS), a Department of Agriculture agency, manages surface resources in the National Forests, including permitting and monitoring surface mining activities. USFS issues permits for mine portals, preparation plants, or any other facility built on National Forest land. It has no jurisdiction for mining activity beneath the surface.¹¹⁷

The Bureau of Land Management (BLM), an Interior Department agency, has the same responsibilities for surface activities on BLM land as USFS has on Forest land. Under the Mineral Leasing Act of 1920¹¹⁸ and the Mineral Leasing Act for Acquired Lands of 1947,¹¹⁹ BLM also administers the government's mineral rights located on both BLM and Forest land, which involves two functions. First, BLM leases federal mineral resources such as coal to private industry. Second, BLM monitors mining to ensure the government receives maximum royalties from coal production pursuant to a Resource and Recovery Protection Plan (R2P2). BLM inspects the federally-leased mines each quarter to verify production and economic

¹¹⁵ See USMC Report, *supra* note 11, at 13; Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 122-26; Testimony of Michael K. McCarter, Professor and Chairman of Mining Engineering, University of Utah, UMSC Hearing, Nov. 13, 2007, at 16-17, 36-37. Robert Ferriter also pointed to MSHA's closure of its Denver Safety and Health Technology Center as stalling research on western coal bump prevention. See Ferriter Statement, *supra* note 21. See also Letter from Neil L. Getzelman, President, Interwest Mining Co. & Gene E. DiClaudio, President, Arch Western Bituminous Group to Scott M. Matheson, Jr., Chair, UMSC (Dec. 17, 2007) (on file with author).

¹¹⁶ Testimony of Gary Burkhardt, Assistant Director of Biophysical Resources, U.S. Forest Service, UMSC Hearing, Oct. 22, 2007, at 57. See also Testimony of David Tabet, Energy Analysis Program Manager, Utah Geological Survey, UMSC Hearing, Oct. 22, 2007, at 74-76 (explaining that UGS works cooperatively with MSHA, other agencies, and industry).

¹¹⁷ See USMC Report, *supra* note 11, at 14; Testimony of Gary Burkhardt, Assistant Director of Biophysical Resources, U.S. Forest Service, UMSC Hearing, Oct. 22, 2007.

¹¹⁸ 30 U.S.C. §§ 181-287 (2006).

¹¹⁹ 30 U.S.C. §§ 351-59 (2006).

recovery. Of the twenty-five underground coal mines on federal land, eleven are located in Utah.¹²⁰

Moving to the state agencies, the Utah Division of Oil, Gas and Mining (OGM), a division of the Utah Department of Natural Resources, has responsibility for environmental and public health on the surface of the mines. This responsibility stems from the Surface Mining Control and Reclamation Act of 1977 (SMCRA),¹²¹ which sets federal standards but allows any state to assume lead responsibility for regulating the environmental effects of coal mining on the surface.¹²² OGM has assumed this primary responsibility, with funding and oversight from the Office of Surface Mining in the Department of the Interior. OGM has no formal regulatory authority over underground coal mine safety.¹²³

The Utah School and Institutional Trust Lands Administration (SITLA) also has no formal regulatory responsibility for underground coal mine safety. SITLA is responsible for managing the school trust lands that were granted to Utah upon statehood to support public schools and other designated beneficiaries. SITLA leases mineral rights to coal operators for coal-bearing SITLA land and receives royalties on production.¹²⁴ SITLA is primarily interested in economic recovery from the resource.¹²⁵ Through an agreement, BLM determines economic recovery and verifies production on SITLA coal mining leases.¹²⁶

The Utah Geological Survey (UGS), a division of the Utah Department of Natural Resources, is an information and applied research agency with no regulatory authority. It provides scientific information about Utah's geologic environment, resources, and hazards. UGS compiles data on coal production, distribution, and reserves, and publishes the annual review and forecast of Utah coal. It is working with MSHA to compile a database on abandoned mines in Utah.¹²⁷

¹²⁰ See Testimony of Bob Anderson, Deputy Assistant Director for Minerals Realty and Resource Protection, Bureau of Land Management, UMSC Hearing, Dec. 11, 2007, at 5; Testimony of Kent Hoffman, Deputy State Director for Lands and Minerals, Bureau of Land Management, Utah State Office, UMSC Hearing, Dec. 11, 2007; UMSC Report, *supra* note 11, at 14-15.

¹²¹ Surface Mining Control and Reclamation Act, Pub. L. No. 95-87, 91 Stat. 445 (1977), 30 U.S.C. §§ 1201-1328 (2006).

¹²² 30 U.S.C. § 1253 (2006). See *National Wildlife Federation v. Hodel*, 839 F.2d 694, 701 (D.C. Cir. 1988).

¹²³ See UMSC Report, *supra* note 11, at 18-19; Testimony of John Baza, Director, Utah Division of Oil, Gas and Mining, UMSC Hearing, Nov. 13, 2007, at 131-32. Mr. Baza also presented an overview of the role and responsibilities of his division to the UMSC on September 10, 2007, which can be heard at <http://minesafetycommission.utah.gov/meetings/UMSC%20Meeting%2009-10-2007/Conference.mp3> (last visited Dec. 19, 2008).

¹²⁴ See UMSC Report, *supra* note 11, at 20.

¹²⁵ See Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 20-21.

¹²⁶ See *id.*; UMSC Report, *supra* note 11, at 20.

¹²⁷ See UMSC Report, *supra* note 11, at 19; Testimony of David Tabet, Energy Analysis Program Manager, Utah Geological Survey, UMSC Hearing, Oct. 22, 2007.

E. Comparative State Regulation

The UMSC needed a comparative understanding of state coal mine safety regulation to address the role of the State of Utah in this area. This information was not available in convenient form. The Commission relied on the research efforts of the Utah Labor Commission and a team of law students from the University of Utah S.J. Quinney College of Law for assistance on this issue. The latter studied the coal mine safety regulatory programs in the twelve states with significant underground operations.¹²⁸

State involvement in coal mine safety varies significantly. It can include training programs, testing and certification of miners, licensing of operators, review and approval of mining plans, promulgation and enforcement of safety regulations, and mine inspections. Just a few states perform all of these functions, and there is a broad spectrum of state regulatory activity.¹²⁹

For example, in West Virginia the Office of Miners' Health Safety and Training administers a robust regulatory program with about 110 employees assigned to four regional offices and the Charleston headquarters. The inspection staff conducts regular inspections and investigates all serious mining accidents. The office also maintains a mine rescue team.¹³⁰ Pennsylvania and Kentucky also operate comprehensive programs that include annual licensing of coal mine operations and submission of roof control, ventilation, and other mine plans. By contrast, Utah and Colorado limit their involvement to testing and certification of certain mining occupations with the support of MSHA grants.¹³¹ Neither state has mine safety regulations, mine inspections, or other oversight or enforcement functions.

III. FEDERALISM AND COAL MINE SAFETY REGULATION

A. Cooperative Federalism, Floor and Ceiling Preemption, and Federal Primacy in Coal Mine Safety Regulation

This section places coal mine safety in the broader context of regulation in the federal system. Starting with the New Deal years and especially in the last half of the twentieth century, Congress has designed numerous regulatory programs that involve federal, state, and local government participation. These regulatory structures include a model called cooperative federalism or delegated program federalism, under which Congress exercises its Commerce Clause "power to offer States the choice of regulating [private] activity according to federal standards or

¹²⁸ See UMSC Report, *supra* note 11, at 35.

¹²⁹ *Id.* at 25-26.

¹³⁰ The W. Va. Office of Miners' Health Safety & Training, <http://www.wvminesafety.org/minerescue.htm> (last visited Dec. 11, 2008).

¹³¹ UMSC Report, *supra* note 11, at 26.

having state law pre-empted by federal regulation.”¹³² For the past four decades, cooperative federalism has been the primary regulatory model in the area of environmental law and policy¹³³ and workplace safety. Coal mine safety regulatory policy has not followed this model, but it allows for some state participation that serves federalism values.

The premise of cooperative federalism is that federal and state governments work together to protect health, the environment, and natural resources. Federal pollution control legislation authorized federal agencies to develop regulations to protect health and the environment, and it gave states the choice to administer programs to implement the regulations¹³⁴ or issue permits to specific polluters.¹³⁵ The federal environmental laws also generally authorized the states to adopt more stringent standards than the federal standards.¹³⁶

The cooperative federalism framework includes various carrots, such as federal funding, and sticks, such as the threat of federal preemption, to encourage states to implement the program in compliance with federal regulations.¹³⁷ This approach was supposed to enable states to fulfill their potential as “laboratories” of experimentation, and state environmental programs have demonstrated that states can make significant contributions to environmental protection.¹³⁸ Whether the intent of cooperation and innovation has been realized and whether it has achieved effective environmental protection is hotly debated.¹³⁹

The extent and nature of federal, state, and local governments’ participation in the various regulatory systems varies, but rarely is state government foreclosed altogether from involvement. For example, the Surface Mining Reclamation Control Act (SMCRA) follows other federal environmental legislation in authorizing states to assume “exclusive jurisdiction” to administer and enforce the federal standards.¹⁴⁰ Similarly, the Occupational Safety and Health Act of 1970 authorizes state plans for enforcement of the federal workplace safety standards.¹⁴¹ By contrast, the Federal Mine Safety Act establishes federal regulatory primacy.

Of the three basic components of cooperative federalism in the field of environmental and workplace safety protection—state options to (1) develop

¹³² *New York v. United States*, 505 U.S. 144, 167 (1992). See William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. Rev. 1547, 1550 (2007).

¹³³ See generally Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196 (1977).

¹³⁴ See, e.g., Clean Air Act, 42 U.S.C. § 7410(a)(2) (2000).

¹³⁵ See, e.g., Clean Water Act, 33 U.S.C. § 1342(b) (2006).

¹³⁶ See, e.g., Clean Air Act, 42 U.S.C. § 7416 (2000); Clean Water Act, 33 U.S.C. § 1370 (2006).

¹³⁷ See generally DENISE SCHEBERLE, *FEDERALISM AND ENVIRONMENTAL POLICY: TRUST AND THE POLITICS OF IMPLEMENTATION* (1997).

¹³⁸ See Robert L. Glicksman, *From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy*, 41 WAKE FOREST L. REV. 719, 801 (2006).

¹³⁹ See, e.g., *id.*

¹⁴⁰ 30 U.S.C. § 1253 (2006). See *National Wildlife Federation v. Hodel*, 839 F.2d 694, 701 (D.C. Cir. 1988).

¹⁴¹ 29 U.S.C. § 667 (2006).

implementation plans to assure compliance with federal standards,¹⁴² (2) administer the federal programs,¹⁴³ and (3) adopt more stringent state standards¹⁴⁴—the Federal Mine Safety Act includes only the third. Under the Act, MSHA is responsible to enforce federal mine safety standards, and it does so in every coal mining state. States are not authorized to assume key implementation and enforcement roles under the Act.¹⁴⁵ The states do retain discretion to act in a consistent and even stricter approach than the federal government in regulating coal mine safety.

The concepts of federal regulatory floors and ceilings help to understand where states fit in the Federal Mine Safety Act framework. Under a regulatory floor approach, also known as floor preemption, federal standards set minimum requirements that allow more strict state regulatory or common law action but do not permit less protective or more lenient approaches. This is sometimes referred to as a one-way ratchet. In addition, any state regulation must be consistent with federal standards; state regulation inconsistent with federal standards would produce conflict preemption.¹⁴⁶ Apart from less stringent or conflicting standards, states can regulate up to where the judiciary would find a Dormant Commerce Clause violation.¹⁴⁷ Floor preemption, by setting a minimum level of protection, only partially precludes state choice. It disallows less stringent state regulation. It allows additional state regulatory action and corresponding benefits of institutional diversity, including reform of ineffective regulation.¹⁴⁸

A federal ceiling sets a unitary requirement that precludes further regulatory options to state lawmakers and courts. The ceiling prohibits additional or more stringent state regulation. It provides industry with regulatory certainty and eliminates the role of state and local government in considering different regulatory approaches.¹⁴⁹

The Federal Mine Safety Act sets a regulatory floor that allows the states to adopt more stringent measures. A state's abandonment of the field essentially converts the MSHA system into the functional equivalent of federal ceiling regulation in that state. Critics of federal ceiling regulation point to risks of regulatory failure, including industry capture of the regulatory system, outdated information and actions, and agency and legislative inertia.¹⁵⁰ If vesting all regulatory responsibility in one agency can produce these results, Utah and other states made that choice when they decided to abandon coal mine safety regulation.

Under a floor preemption approach, the federal government can influence state policy choices in a variety of ways. The most direct federal encouragement of state

¹⁴² Clean Air Act Amendments of 1970, 42 U.S.C. § 7410 (2000).

¹⁴³ *Id.* § 7414(b).

¹⁴⁴ *Id.* § 7416.

¹⁴⁵ See Testimony of John S. Kirkham, UMSC Hearing, Nov. 20, 2007, at 188-89.

¹⁴⁶ See Buzbee, *supra* note 132, at 1564-68 (2007).

¹⁴⁷ See, e.g., *United Haulers Ass'n v. Oneida-Herkimer Solid Waste Mgmt. Auth.*, 127 S.Ct. 1786, 1796 (2007).

¹⁴⁸ See Buzbee, *supra* note 132, at 1548, 1554-55.

¹⁴⁹ *Id.* at 1568-76.

¹⁵⁰ See *id.* at 1548.

activity is to offer funding support.¹⁵¹ For example, the state would more likely support its own mine inspection to supplement federal inspection efforts if the costs of state implementation could be reduced. Moreover, federal financial inducement may involve less federal cost and provide more safety benefit than if the federal government attempted to increase inspection efforts on its own. A less direct federal approach might involve subsidizing necessary research that would reduce the costs of state implementation.¹⁵²

Setting a federal regulatory floor that substitutes federal for state regulation may have a crowding out effect that discourages state participation, even if the federal floor allows for more stringent state measures. The federal program may signal that a state role is unnecessary, and the state may decide that the net benefits of additional state measures are not worth pursuing, blurring the distinction between a federal floor and ceiling. If the federal program is seen as meeting the state's needs, the state has little incentive to adopt a program of its own.¹⁵³

Two features in the development of federal environmental laws and federal coal mine safety laws are significantly similar and different, respectively. The similar feature is that the inadequacy of state governments in addressing environmental protection and coal mine safety shifted primary responsibility for setting policy in those areas to the federal government, which established federal regulatory floors in both areas. The significant dissimilarity is that the federal government allowed state agencies to implement federal environmental policies—the cooperative federalism approach—and, by contrast, chose almost exclusive federal agency regulation to implement and enforce federal coal mine safety law.

B. State Response to Federal Coal Mine Safety Regulation

The federal coal mine safety laws did not preempt the states completely. Indeed, some coal mining states had developed vigorous coal mine safety laws and regulations and administrative agencies to enforce them, and these states not only have continued their active regulatory roles after the federal regulatory system was implemented, but have taken the lead on safety issues. For a recent example, within three weeks of the Sago Mine disaster of January 2–4, 2006, the West Virginia governor proposed and the legislature enacted legislation that required, beyond what existing federal law required, rapid notification of and response to mine emergencies, storage of additional self-contained self-rescuers underground, and installation of improved mine communication and tracking systems.¹⁵⁴

Other states, especially in the West, having modest coal mine safety programs and struggling with limited budget resources, responded differently to the federal

¹⁵¹ See Jonathan H. Alder, *When Is Two a Crowd? The Impact of Federal Action on State Environmental Regulation*, 31 HARV. ENVTL. L. REV. 67, 82 (2007).

¹⁵² *Id.* at 88, 93.

¹⁵³ *Id.* at 89, 94-106.

¹⁵⁴ See J. DAVITT MCATEER & ASSOCIATES, THE SAGO MINE DISASTER – A PRELIMINARY REPORT TO GOVERNOR JOE MANCHIN III 7 (2006), available at <http://www.wv.gov.org/SagoMineDisasterJuly2006FINAL.pdf>.

legislation. Witnessing the emergence of a significant federal regulatory system of inspecting and monitoring their coal mines, some states deferred to the federal government and diminished or abandoned their participation in the coal mine safety arena. That is what happened in Utah.

After enactment of the Federal Mine Safety Act in 1977, Utah's program, which was modest in having just three inspectors,¹⁵⁵ was scaled back. In 1987, the legislature repealed much of the substantive state law on coal mine regulation.¹⁵⁶ Indeed, in 1988 the legislature passed a statute expressly forbidding the state from inspecting coal mines or enforcing safety regulations as long as the federal rules were in force.¹⁵⁷ From then until now, the Utah Labor Commission "may not assume jurisdiction or authority over adopted standards and regulations or perform any mining inspection or enforcement of mining rules and regulations . . . so long as Utah's mining operations are governed by federal regulations."¹⁵⁸ The 1988 legislation also provided that "for any Utah mine subject to the Federal Mine Safety and Health Act, the sole duty of the commission is to notify the appropriate federal agency of [a safety] complaint."¹⁵⁹

Why would Utah not only abandon coal mine safety regulation but adopt a statutory ban against state regulation? The possible reasons include avoiding the costs of administering a regulatory program when the federal government is willing to do so,¹⁶⁰ protecting local industry from additional compliance costs, seeking a competitive advantage relative to other coal mining states for economic development, and regarding federal regulation as sufficient or perhaps even going too far.¹⁶¹ If a state takes this course, it leaves to Congress and MSHA the responsibility for policy decisions on coal mine safety in the state.¹⁶² The state also implicitly agrees with the way Congress and MSHA have made those decisions,¹⁶³ or decides the federal regulation is excessive and should not be supplemented with

¹⁵⁵ See UTAH LABOR COMM'N, OVERVIEW: REGULATION OF COAL MINE SAFETY IN UTAH – SUMMARY OF HISTORY, CURRENT STATUS AND COMPARISON WITH OTHER STATES, PREPARED FOR AND SUBMITTED TO THE UMSC 9 (2007) [hereinafter "Utah Labor Comm'n Overview"], available at http://minesafetycommission.utah.gov/meetings/UMSC%20Meeting%2009-10-2007/09-10-2007%20Handout%201_Labor%20Commission.pdf; Testimony of Mike Dalpiaz, International Vice President, District 22, United Mine Workers of America, UMSC Hearing, Jan. 3, 2008, at 151.

¹⁵⁶ 1987 Utah Laws 1202. Under the 1987 legislation, Utah still had power to regulate coal mine safety, with the Industrial Commission (later the Labor Commission) retaining authority to promulgate safety rules that incorporated the federal rules. However, the state was prohibited from enforcing those rules while the federal rules were in effect. Eventually, the legislature repealed the Labor Commission's authority to promulgate such rules. See 2001 Utah Laws 1357.

¹⁵⁷ 1988 Utah Laws 756-57. See Testimony of John S. Kirkham, UMSC Hearing, Nov. 20, 2007, at 189, 194.

¹⁵⁸ UTAH CODE ANN. § 34A-1-104(10) (Supp. 2008).

¹⁵⁹ UTAH CODE ANN. § 34A-1-407(2) (2005).

¹⁶⁰ See Testimony of Joseph A. Main, International Mine Safety Consulting, UMSC Hearing, Jan. 3, 2008, at 1118-19.

¹⁶¹ See Jerome M. Organ, *Limitations on State Agency Authority to Adopt Environmental Standards More Stringent than Federal Standards: Policy Considerations and Interpretive Problems*, 54 MD. L. REV. 1373, 1387-90 (1995).

¹⁶² See *id.* at 1387.

¹⁶³ See *id.*

more stringent state regulation. The state also opts out of the federalism role of serving as a “laboratory” for policy ideas and initiatives.

There may be support in some quarters for a significant reform of coal mine safety regulation that returns primary responsibility to the states. Most interested parties in government and industry regard the current model, with MSHA taking the primary regulatory lead, as the safety regulatory infrastructure for the foreseeable future. This discussion examines the state government’s role in that context. It will not attempt to evaluate whether the federal system sets a sufficient regulatory floor, but the existence of such a floor eliminates the need to determine whether states would adopt adequate safety protections in the absence of federal regulation.¹⁶⁴

The benefits of state participation in a regulatory structure in which the federal government has assumed the primary role requires analysis of the values of federalism as applied to the context of coal mine safety.

IV. FEDERALISM VALUES AND COAL MINE SAFETY REGULATION

A. Federalism Values

The commonly recognized values of federalism include preventing federal government tyranny, enhancing democracy through local governance, facilitating policy experimentation, and safeguarding individual liberty.¹⁶⁵ With the rise of the administrative state since the New Deal and the development of regulatory policies to address complex problems, the common federalism values continue to be regarded as desirable but in need of further elaboration and refinement.¹⁶⁶ The following will briefly discuss the federalism values of innovation, efficiency, community empowerment, accountability, meeting diverse needs, and dynamic policymaking.

The most often cited federalism value in a regulatory context is innovation. Federated government offers the opportunity for states to operate and innovate as “laboratories of democracy.”¹⁶⁷ Alongside the growth of the federal government, states have become better equipped in the last several decades to fulfill this experimentation role through institutional reforms that have made state legislatures more professional and have enhanced the administrative capacities of state executive branches.¹⁶⁸

¹⁶⁴ See Alder, *supra* note 151, at 68.

¹⁶⁵ See ERWIN CHEMERINSKY, ENHANCING GOVERNMENT – FEDERALISM FOR THE 21ST CENTURY 98-99 (2008); GEOFFREY R. STONE, LOUIS M. SEIDMAN, CASS R. SUNSTEIN, MARK V. TUSHNET & PAMELA KARLAN, CONSTITUTIONAL LAW 165-66 (2005).

¹⁶⁶ See CHEMERINSKY, *supra* note 165, at 99-113.

¹⁶⁷ *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting); see Michael W. McConnell, *Federalism: Evaluating the Founders’ Design*, 54 U. CHI. L. REV. 1484, 1498-99 (1987).

¹⁶⁸ See ANDREW KARCH, DEMOCRATIC LABORATORIES: POLICY DIFFUSION AMONG THE AMERICAN STATES 14-17 (2007).

Indeed, policy innovations often are developed at the state level and move to the national level.¹⁶⁹ Proponents of a pragmatic, risk-based approach to environmental, health, and safety regulation that achieves “the maximum level of protection consistent with reasonable cost” point to different strategies to make regulatory adjustments, including experimental state programs.¹⁷⁰

One of the limits to such innovation is the potential for a state to free ride—to copy or borrow—the innovations of others, which diminishes the incentive to innovate.¹⁷¹ However, the effectiveness of regulatory policies depends on the particular circumstances for which they are developed. If effective regulation must be tailored to the unique characteristics of a state or region, then there is more incentive for a state to determine and implement the best policy rather than to wait for others to point the way.¹⁷² Unique coal safety challenges in Utah should help overcome the free rider problem.

With a constitutional structure having both federal and state governments to provide effective government, specific federalism values in addition to state and local “laboratory” innovation may point to national action in some matters and state and local action in others. As the challenges of public policy grow increasingly complex, federalism values having distinct instrumental purposes also often point to joint and overlapping responsibility among the levels of government.

For example, sometimes the value of efficiency points to national regulation and other times to local control. But experience in policy areas such as environmental health and workplace safety suggests that shared and interacting responsibilities have increasingly become the most effective norm. Community empowerment as a federalism value most often comes through citizen participation at the local level, although for some policies, national defense being the most-often cited example, federal choices are needed.

Accountability is another value that typically favors local government decision-making, but, again, this may depend on the issue involved and also on whether the involvement of multiple levels of government blurs lines of responsibility. Decentralized government may be better to meet diverse needs, but sometimes a uniform national standard may be the better course.¹⁷³

Rarely is the choice of federal or state responsibility an either/or matter. Leading commentators on designing government responsibility in a federated democratic structure have recognized the pragmatic benefit of shared and

¹⁶⁹ *Id.* at 68.

¹⁷⁰ See SIDNEY SHAPIRO & ROBERT GLICKSMAN, *RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH*, 147, 159 (2003).

¹⁷¹ See Susan Rose-Ackerman, *Risk Taking & Reelection: Does Federalism Promote Innovation?*, 9 J. LEGAL STUD. 593 (1980).

¹⁷² See Brian Galle & Joseph Leahy, *Laboratories of Democracy? Policy Innovation in Decentralized Government*, 58 *Emory L.J.* (forthcoming 2008) (at 18-20 in paper download), http://works.bepress.com/cgi/viewcontent.cgi?article=1007&context=brian_galle (last visited Feb. 8, 2009).

¹⁷³ See CHEMERINSKY, *supra* note 165, at 117-23.

cooperative federal and state roles to solve problems.¹⁷⁴ Professor Erwin Chemerinsky recognizes the notion of “federalism as empowerment.” He explained, “If one level of government fails [to address society’s problems and needs], there is another to take over the responsibility.”¹⁷⁵

Professor Kirsten Engel uses the term “dynamic federalism” to explain that policy-making in our federal system often involves multiple levels of government collaborating in the regulatory process. Interactive federal and state regulatory roles provide a check upon interest group capture of the regulatory process, more opportunity for diverse participants in policymaking, and greater opportunities for policy innovation and refinement.¹⁷⁶ This dynamic or empowerment conception of federalism recognizes the benefits of checks and balances that jurisdictional overlap provides,¹⁷⁷ including an antidote to interest group capture.¹⁷⁸

Professor Michael Dorf’s and Professor Charles Sabel’s conception of “democratic experimentalism” calls for decentralized power and stakeholder participation to fit solutions to local circumstances. Combined with national coordination and sharing of knowledge, this collaborative approach to public law increases efficiency through mutual learning and accountability via citizen participation at the local level.¹⁷⁹ The participatory administrative feature of democratic experimentalism calls for Congress to leave the states significant room for policy setting.¹⁸⁰

Although these scholars differ in emphasis and details, they share the increasingly accepted view that our federal system offers strong policy benefits by encouraging robust interaction among the different levels of government. They also emphasize the importance of participation, collaboration, diversity, and decentralization as essential elements of effective governance.¹⁸¹

A federal system, with its vertical layers of government, can facilitate effective governance through how responsibility is allocated for various public policies, and federalism considerations should inform these arrangements. This analysis can be particularly useful in a context where, as with the existing system of coal mine safety regulation, both the federal government and state and local governments can participate together. For coal mine safety regulation, application of federalism values suggests a productive role for the states within the governing federal

¹⁷⁴ See David A. Adelman & Kirsten H. Engel, *Adaptive Federalism: The Case Against Reallocating Environmental Regulatory Authority*, 92 MINN. L. REV. 1796, 1798-99 (2008).

¹⁷⁵ CHEMERINSKY, *supra* note 165, at 146-47.

¹⁷⁶ See Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L. J. 159, 161, 170-83 (2006).

¹⁷⁷ *Id.* at 179.

¹⁷⁸ *Id.* at 181.

¹⁷⁹ See Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 314-23 (1998).

¹⁸⁰ *Id.* at 428; see Michael C. Dorf, *Legal Indeterminacy and Institutional Design*, 78 N.Y.U. L. REV. 875, 886 (2003).

¹⁸¹ See Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 371-404 (2004).

regulatory structure. The following discussion attempts to develop and apply federalism considerations to coal mine safety regulation.

B. Federalism Values and Coal Mine Safety Regulation

The primary federalism consideration in coal mine safety regulation is the policy choice between decentralized regulation to meet diverse needs and uniform standards to achieve regulatory certainty. An important factor is the extent to which the contextual complexities of coal mine safety in a particular state call for a regulatory system that is tailored to local conditions.

The initial pressure for uniform federal standards for coal mine safety did not come from industry or the states. Indeed, both strongly opposed the initial modest attempts in 1941 to provide for federal inspection.¹⁸² Congress supported this step based upon the absence of uniform standards and inadequate enforcement among the states.¹⁸³ Taking the current federal regulatory structure of floor preemption, MSHA enforcement, and state discretion to regulate consistently or more stringently, a critical question each state faces is whether it can improve safety by addressing unique conditions in its coal mines.

Related federalism considerations inform this policy decision. State responsiveness to local conditions promotes community empowerment and accountability. Having alternative regulatory voices, protections, and approaches fostered under floor preemption provides the dynamic policy-making that can serve as an antidote to common forms of regulatory failure, such as agency capture, enforcement laxity, and the inertia of the status quo. Through floor preemption, the Federal Mine Safety Act precludes some state options but allows regulatory interaction that can foster mutual learning.¹⁸⁴ Accordingly, concurrent federal and state authority to develop safety programs allows the affected parties and the public access to multiple forums to seek government assistance in protecting health and safety.¹⁸⁵

State policy makers may have better access to local problems and conditions, may be more responsive to local concerns and needs, and may be able to target state resources on issues unique to their state.¹⁸⁶ By assuming some regulatory responsibility, states bring additional perspective and regulatory analysis to the federal effort and foster dynamic interaction among the federal, state, and private stakeholders.¹⁸⁷ The possibility of a state regulator addressing safety issues may counteract inertia of the federal counterparts.¹⁸⁸ The state workers' compensation and tort systems provide additional incentive to industry to prevent harm and lower

¹⁸² See WHITESIDE, *supra* note 2, at 167-69.

¹⁸³ H.R. REP. NO. 77-168, at 3-4 (1941). See also S. REP. NO. 95-181, at 2 (1977), *reprinted in* 1977 U.S.C.C.A.N. 3401, 3402.

¹⁸⁴ See Buzbee, *supra* note 132, at 1588.

¹⁸⁵ See Glicksman, *supra* note 138, at 801.

¹⁸⁶ See HENRY BUTLER & JONATHAN R. MACEY, USING FEDERALISM TO IMPROVE ENVIRONMENTAL POLICY 27 (1996); Alder, *supra* note 151, at 77, 106-07.

¹⁸⁷ See Buzbee, *supra* note 132, at 1587-88.

¹⁸⁸ See *id.* at 1611.

risk beyond meeting the federal standard.¹⁸⁹ The state regulatory possibilities include more stringent standards but also qualitatively preferable approaches based on the particular conditions to be addressed.¹⁹⁰

By contrast, a federal ceiling does not leave room for state experimentation and tailoring. A uniform federal standard often fails to fit any state very well.¹⁹¹ It eliminates the interaction preserved under floor preemption, a form of regulatory checks and balances, and thereby precludes innovation and varied approaches that may produce better results.¹⁹² The phenomenon of agency capture—regulation benefitting the ostensible regulatory target—is widely discussed in the regulatory literature.¹⁹³ Capture risks arise at the federal and state level, but all sides will concentrate on a single agency if there is only one regulator.¹⁹⁴

On the other hand, a single federal set of standards promotes regulatory certainty that allows the targets of regulation to plan and act with more confidence and to avoid the potentially conflicting and confusing direction of two regulatory systems. A single regulatory authority simplifies compliance. Multiple layers of regulation may reduce transparency and make it more difficult to hold government officials accountable for their performance.¹⁹⁵

For the targeted industry, a single uniform standard creates regulatory stability and reduces the costs of addressing regulatory issues in multiple venues.¹⁹⁶ Once it is clear that the federal government is going to enter the regulatory process, the pressure for national standards and a uniform ceiling often comes from industry.¹⁹⁷ The tradeoff is between innovation and uncertainty.¹⁹⁸ But there may be more than that to the tradeoff. State regulation combined with non-preemptive federal regulation can lead to overlapping standards, confusion, and higher compliance costs.¹⁹⁹

One response to the need for coal mine safety regulation to be tailored to local circumstances is to design the federal agency's management structure in a flexible, adaptive, and decentralized manner.²⁰⁰ Indeed, the Federal Mine Safety Act contains detailed procedures to modify the application of standards based on circumstances at a particular mine.²⁰¹ The Secretary of Labor abuses her discretion

¹⁸⁹ See *id.* at 1588.

¹⁹⁰ See Alder, *supra* note 151, at 106-08.

¹⁹¹ See *id.* at 107.

¹⁹² See Buzbee, *supra* note 132, at 1612.

¹⁹³ See generally George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971) (arguing that regulation tends to benefit those ostensibly regulated).

¹⁹⁴ See Buzbee, *supra* note 132, at 1609.

¹⁹⁵ See *New York v. United States*, 505 U.S. 144, 168-69 (1992).

¹⁹⁶ See Buzbee, *supra* note 132, at 1590-92; Paul S. Weiland, *Federal and State Preemption of Environmental Law: A Critical Analysis*, 24 HARV. ENVTL. L. REV. 237, 242 (2000).

¹⁹⁷ See Alder, *supra* note 151, at 84-85.

¹⁹⁸ See Buzbee, *supra* note 132, at 1599-1600.

¹⁹⁹ See *id.* at 1610.

²⁰⁰ See Edward L. Rubin & Malcolm Feeley, *Federalism: Some Notes on a National Neurosis*, 41 UCLA L. REV. 903, 914-26, 929 (1994).

²⁰¹ See OSHL, *supra* note 39, at 661.

if she requires adoption of a mining plan without consideration of specific conditions of a mine.²⁰²

However, the federalism value of meeting diverse local needs is more likely to accrue through participation by state government, which not only can tailor safety standards to local conditions, but also can make different policy choices and account to a different electorate in ways that are beneficial to that constituency.²⁰³ State involvement serves the important value of self-determination in the selection of safety policies.²⁰⁴

Testimony before the UMSC commented upon MSHA's performance in adapting its regulatory mandate to conditions in the West. The comments indicated that agency personnel tended to reflect an eastern regional perspective and expertise and a resistance to adapt to the West.²⁰⁵ MSHA countered that a majority of its inspectors in Utah had western coal experience.²⁰⁶ However, a Government Accountability Office (GAO) report issued in May 2007, referring to inspectors, said that "MSHA's human capital plan does not include a strategic approach for addressing the large number of retirements expected in the next 5 years,"²⁰⁷ which in turn indicates a challenge to recruit inspectors with a background in western coal mining.

MSHA efforts to tailor its regulatory oversight to the particular circumstances of a region or a specific mine helps to avoid the costs and inefficiencies of trying to enforce a rigid, uniform standard. However, without state involvement, MSHA assumes greater enforcement discretion, and that may lead to agency capture. Professor Mark Seidenfeld notes, "[a]s regulators' discretion increases, so does the potential for special interest groups to influence agency policy."²⁰⁸ This potential is even greater in a complex regulatory context where the regulators and the regulated entities have close and frequent contact and public participation and scrutiny is modest.²⁰⁹ The various investigation reports of the Crandall Canyon Mine disaster discussed below supply evidence of this problem.

²⁰² See *United Mine Workers of America v. Dole*, 870 F.2d 662, 672 (D.C. Cir. 1989).

²⁰³ See Rubin & Feeley, *supra* note 200, at 914-26.

²⁰⁴ See Stewart, *supra* note 133, at 1231.

²⁰⁵ See Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 119, 142-43; Testimony of John Palacios, UMSC Hearing, Oct. 2, 2007, at 91 (coal miner since 1947).

²⁰⁶ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 46.

²⁰⁷ GOVERNMENT ACCOUNTABILITY OFFICE, GAO-07-704R, REVISED HIRING PROCESS HAS IMPROVED THE AGENCY'S RECRUITING EFFORTS, BUT ITS HUMAN CAPITAL STRATEGIC PLAN DOES NOT ADEQUATELY PROJECT OR ADDRESS ITS FUTURE WORKFORCE NEEDS 1 (2007), *available at* <http://www.gao.gov/new.items/d07704r.pdf> (last visited Dec. 11, 2008).

²⁰⁸ Mark Seidenfeld, *Bending the Rules: Flexible Regulation and Constraints on Agency Discretion*, 51 ADMIN. L. REV. 429, 459 (1999).

²⁰⁹ See Clifford Rechtschaffen, *Promoting Pragmatic Risk Regulation: Is Enforcement Discretion the Answer?*, 52 U. KAN. L. REV. 1327, 1352-53 (2004); Matthew D. Zinn, *Policing Environmental Regulatory Enforcement: Cooperation, Capture, and Citizen Suits*, 21 STAN. ENVTL. L. J. 81, 126-27 (2002).

Efficiency considerations in a federal system favor the federal government for some matters, states for others, and a collaborative approach for yet others. For example, states should not attempt to replicate a research program that the federal government already has undertaken because the institutional expertise has been developed and the start up costs are great. The state should, however, encourage its university mining engineering programs to pursue coal safety research opportunities in collaboration with federal research to provide localized knowledge.

The National Institute of Occupational Safety and Health (NIOSH) provides an important research base for mine safety research and is open to working with state-level researchers. In 2007 NIOSH “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,”²¹⁰ and NIOSH and the University of Utah Department of Mining Engineering are engaged in several research projects. This development is welcome in light of several presenters telling the USMC that the closure of the U.S. Bureau of Mines in 1996 produced a decline of federal research on safety issues applicable to Utah’s coal mines.²¹¹

State government can facilitate collaboration by providing adequate funding to its research universities, especially in the mining engineering field, and by promoting research partnerships. Safety experts have identified partnerships in research and development—involving operators, labor, academia, and government—as the key to improving safety in the nation’s coal mines.²¹²

The USMC hearings included numerous comments that reflected the benefits and costs of active state participation in the context of a federal regulatory scheme, including points consistent with aforementioned notions of federalism as empowerment, dynamic federalism, and democratic experimentation. For example, some witnesses stressed the importance of “two sets of eyes”—federal and state—scrutinizing critical safety factors at underground coal mines.²¹³ A related point was the value of independent evaluation of safety issues. The ability and incentive of the state to understand and focus on the unique features of its coal mines was offered as a regulatory advantage. On the other hand, the industry representatives in particular emphasized the importance of regulatory certainty and the cost and efficiency problems in having to operate under two regulatory systems rather than just the MSHA regime. A related point was the potential for duplication of regulatory resources.²¹⁴

During the USMC deliberations, two members of the Commission who opposed instituting a state inspection system to supplement MSHA inspections voiced support for the State of Utah to take the regulatory lead on coal mine safety

²¹⁰ See USMC Report, *supra* note 11, at 13.

²¹¹ See *supra* note 115.

²¹² See Grayson & Watzman, *supra* note 78, at 12.

²¹³ See, e.g., Testimony of Mike Dalpiaz, International Vice President, District 22, United Mine Workers of America, USMC Hearing, Jan. 3, 2008, at 152.

²¹⁴ Numerous examples of these points are identified in Section VI below, along with citations to particular witnesses.

by displacing MSHA.²¹⁵ This states' rights preference was reflective of the Western States' traditional distrust of the federal government and skepticism that national standards and federal regulators can adapt to local needs. An intermediate position would be the cooperative federalism model of federal standards and delegated authority for state government implementation as reflected in the environmental protection field.

Assessing the strengths and weaknesses of these regulatory models for coal mine safety relative to the current MSHA system is an interesting policy debate. The focus here, however, is the role of the state in the current MSHA framework because it is very unlikely that Congress will dismantle it in favor of a more decentralized regulatory structure. Moreover, the Federal Mine Safety Act, although it does not provide for delegated program federalism, does through floor preemption allow states to tailor more stringent standards and apply them to local conditions, and the Act allows ongoing application of state compensation and tort law.

In the context of underground coal mine safety regulation, a state like Utah, which has been absent from safety regulation for almost thirty years, is well-positioned to benefit from the federal system. The regulatory innovations of other states can be evaluated and adopted assuming the information about successful efforts in other states is available and such efforts are not too costly to implement.²¹⁶ If the safety challenges in the state are unique and acute, the state should have great incentive to tailor safety measures to the challenge at hand.²¹⁷ Safety risk that is dependent on local circumstances is not necessarily best addressed through a uniform national standard and a federal government perspective.

V. CRANDALL CANYON INVESTIGATION REPORTS

The Crandall Canyon investigation reports will not be reviewed in detail here, but their key findings are relevant to this article's consideration of the state's role in coal mine safety. The two principal investigations were (1) the MSHA accident investigation required under the Federal Mine Safety Act,²¹⁸ and (2) an independent investigation of the actions of MSHA requested by the Secretary of Labor.²¹⁹ Both issued reports in July 2008.

²¹⁵ Comments from Utah State Senator Mike Dmitrich and former U.S. Senator Jake Garn, UMSC Hearing, Jan. 11, 2008, at 89-90, 97.

²¹⁶ See Galle & Leahy, *supra* note 172, at 23-34.

²¹⁷ See *id.* at 18-20, 34.

²¹⁸ U.S. DEP'T OF LABOR, MINE SAFETY AND HEALTH ADMIN., ID No. 42-01715, COAL MINE SAFETY AND HEALTH REPORT OF THE INVESTIGATION, UNDERGROUND COAL MINE, FATAL UNDERGROUND COAL BURST ACCIDENTS, AUG. 6 AND 16, 2007, CRANDALL CANYON MINE, GENWAL RESOURCES, INC., HUNTINGTON, EMERY COUNTY, UTAH 1 (2008), available at <http://www.msha.gov/Fatals/2007/CrandallCanyon/FTL07CrandallCanyon.pdf> [hereinafter "MSHA Investigation Report"].

²¹⁹ EARNEST C. TEASTER, JR., JOSEPH W. PAVLOVICH, INDEPENDENT REVIEW OF MSHA'S ACTIONS AT CRANDALL CANYON MINE, GENWAL RESOURCES, INC., HUNTINGTON, EMERY COUNTY, UTAH, PREPARED FOR ELAINE L. CHAO, SECRETARY OF LABOR, U.S. DEP'T OF LABOR (July 21, 2008),

The MSHA investigation described the August 6, 2007 tragedy at Crandall Canyon as “a catastrophic coal outburst . . . during pillar recovery in the South Barrier section” that immediately caused “overstressed pillars [to fail] throughout the South Barrier Section,” and “likely caus[ed] fatal injuries to” six miners.²²⁰ On August 16, 2007, another “coal outburst occurred . . . adjacent to rescue workers.” Three rescue workers “received fatal injuries,” and “[s]ix additional rescue workers . . . were also injured.”²²¹

The MSHA investigation concluded that “[t]he August 6 collapse was not a ‘natural’ earthquake, but rather was caused by a flawed mine design,” that “stress level exceeded the strength of the pillar,” and that the “mining plan was destined to fail.”²²² The investigation’s three methods of analysis—the Analysis of Retreat Mining Pillar Stability (ARMPS) empirical computer model, a finite element analysis of the mining plan, and a boundary element analysis—all pointed to an unstable situation “primed for massive pillar collapse.”²²³ The seismic analyses indicated “the collapse was most likely initiated by the mining activity.”²²⁴

According to the report, why did this happen? Through a subsidiary, Murray Energy Corporation acquired the parent company of Genwal Resources, Inc., the Crandall mine operator, in August 2006, and finalized plans to mine the remaining barrier pillars. However, the MSHA investigation found that the “mine design was inadequate and incorporated flawed design recommendations from contractor Agapito Associates, Inc.”²²⁵ The contractor, based on faulty ARMPS analysis, “recommended a pillar design for the South Barrier that had a lower calculated pillar stability factor than recommended by NIOSH,” resulting in “pillar dimensions that were not compatible with effective ground control.”²²⁶ Agapito also “overestimated pillar strength and underestimated load” through a flawed application of the Lamodel engineering model.²²⁷

The MSHA report further found that the mine designs failed to provide sufficient ground stability to support the ventilation system. The operator mined from the South Barrier in crosscut locations “intended to be left unmined to protect the bleeder system” and mined “in violation of the approved roof control plan.”²²⁸ The report found that GRI, in violation of federal law,²²⁹ failed to report three coal outbursts before the August 6 accident or properly revise its mine plan

available at <http://www.msha.gov/ccreview/CrandallCanyonIndependentReview.pdf> [hereinafter “Independent Review of MSHA”].

²²⁰ MSHA Investigation Report, *supra* note 218, at 1.

²²¹ *Id.*

²²² *Id.* at 1-2. University of Utah seismologists concluded that an earthquake did not cause the collapse. Instead, mining operations caused the collapse, which in turn caused the 3.9 magnitude shock. See Robert Gehrke & Mike Gorrell, *Report: Crandall Caved In Instantly*, S.L. TRIB., June 3, 2008, at A1.

²²³ MSHA Investigation Report, *supra* note 218, at 2.

²²⁴ *Id.*; see Pechmann et al., *supra* note 5.

²²⁵ MSHA Investigation Report, *supra* note 218, at 2.

²²⁶ *Id.*

²²⁷ *Id.*

²²⁸ *Id.* at 3.

²²⁹ 30 C.F.R. § 50.10 (2008).

appropriately after these bursts. The bursts occurred on March 7, March 10, and August 3, 2007.²³⁰ The March 10 bounce was particularly severe, causing operations to cease on the North Barrier Pillar. These failures “deprived MSHA of the information it needed to properly assess and approve GRI’s mining plans.”²³¹ The agency approved the South Barrier retreat mining plan without this information.²³²

The MSHA investigation found that GRI continued pillar mining without changing its methods even though circumstances showed the roof control plan was insufficient to control coal bursts. After the bump incident on August 3, 2007, GRI did not consult with AAI or submit revisions to the roof control plan.²³³ MSHA fined GRI \$1.64 million, which included \$1.34 million for safety violations that directly contributed to the disaster. MSHA fined Agapito \$220,000 for faulty analysis of the mine’s design.²³⁴ MSHA also asked the Department of Justice to conduct a criminal investigation. MSHA head Richard Stickler said that “MSHA determined that the operator and its engineering consultants demonstrated reckless disregard for safety.”²³⁵

The independent review team (IRT) identified many faults in MSHA’s performance both before and after the Crandall Canyon accident. Major deficiencies were found in the mine plan approval process, including “inadequate evaluation of the engineering data submitted by the operator,” “inadequate oversight of the plan evaluation and approval process,” and “inadequate resolution of inconsistencies identified in the engineering data.”²³⁶ In response to this criticism, MSHA head Richard Stickler said that “[w]e had an opportunity to have not approved the [mining] plan and clearly we had a responsibility in that regard and we did not meet that responsibility.”²³⁷

The IRT also criticized MSHA for failure to consider the March 10, 2007, bounce in the North Barrier before approving the plan for the South Barrier and for failure to seek assistance from the Roof Control Division of MSHA’s Pittsburgh Safety and Health Technology Center during the mine plan review.²³⁸ Moreover, the field office failed to evaluate the sufficiency of the roof control plan during its

²³⁰ MSHA Investigation Report, *supra* note 218, at 3.

²³¹ *Id.* at 4; see Robert Gehrke, *A “Bump” in March: Was a Major Red Flag Ignored by Owners?*, S.L. TRIB., Sept. 1, 2007, at A1.

²³² MSHA Investigation Report, *supra* note 218, at 4.

²³³ *Id.*

²³⁴ Press Release (08-10325 NAT), MSHA, MSHA Levies \$1.85 Million in Fines for Crandall Canyon Mine Disaster (July 24, 2008), <http://www.msha.gov/MEDIA/PRESS/2008/NR080724.asp> (last visited Dec. 11, 2008). See Robert Gehrke & Mike Gorrell, *The Mine “Was Destined to Fail,”* S.L. TRIB., July 25, 2008, at A1.

²³⁵ See Mike Gorrell, *MSHA Calls for Criminal Probe*, S.L. TRIB., Sept. 4, 2008, at A1. See also Paul Foy, *Crandall Tragedy a “Perfect” Disaster*, S.L. TRIB., Feb. 17, 2009, at B6 (reporting Utah U.S. Attorney’s comments on status of his office’s review of the evidence).

²³⁶ Independent Review of MSHA, *supra* note 219, at 3.

²³⁷ See Robert Gehrke, *MSHA Concedes It Could’ve Done More*, S.L. TRIB., July 26, 2008, at A1.

²³⁸ Independent Review of MSHA, *supra* note 219, at 3. See also Inspector General’s Report, *infra* note 244, at 10.

inspections of the retreat mining of the barrier pillars.²³⁹ The level of field office staffing was found inadequate for required mine inspections and plan reviews.²⁴⁰ MSHA's approval of the roof control plans for barrier pillar mining at Crandall Canyon based on inadequate evaluation "contributed to the occurrence of the August 6th accident."²⁴¹

The IRT also found numerous shortcomings in MSHA's performance during the rescue attempt. The review concluded that "MSHA failed to follow established mine rescue protocol at all times at the Crandall Canyon Mine."²⁴² It further found that MSHA had "failed to provide adequate training in mine emergency procedures for personnel required to respond to a mine emergency."²⁴³

Other investigative reports were released in the months leading up to the reports described above. The Inspector General of the Department of Labor issued a performance audit of MSHA on March 31, 2008, which concluded that "MSHA was negligent in carrying out its responsibilities to protect the safety of miners. Specifically, MSHA could not show that it made the right decision in approving the Crandall Canyon Mine roof control plan." MSHA could not show "that the process was free from undue influence by the mine inspector." Further, "MSHA could not demonstrate that it had adequately reassessed the roof control plan" or that it had taken "sufficient actions to determine whether the mine operator followed the approved plan."²⁴⁴

Senate and House Committees also issued reports. Committee Chair Senator Edward Kennedy released a Senate Health, Education, Labor, and Pensions Committee report that identified "multiple failures in both the company's formulation and MSHA's review of the mining plans at Crandall Canyon" and described the record as the company "bullying a compliant MSHA."²⁴⁵ The report highlighted the post-Crandall accident NIOSH analysis that critiqued Agapito's aggressive engineering assumptions in developing the roof control plan.²⁴⁶ It faulted MSHA for a "rushed, superficial, and pro forma" mine plan review and approval that disregarded an MSHA district engineer's safety concerns about the

²³⁹ Independent Review of MSHA, *supra* note 219, at 3.

²⁴⁰ *Id.* at 5.

²⁴¹ *Id.*

²⁴² *Id.* at 4.

²⁴³ *Id.*

²⁴⁴ U.S. DEP'T OF LABOR, OFFICE OF THE INSPECTOR GEN., REPORT NO. 05-08-003-06-001, OFFICE OF AUDIT, MSHA COULD NOT SHOW IT MADE THE RIGHT DECISION IN APPROVING THE ROOF CONTROL PLAN AT CRANDALL CANYON 1, 2, 5-6, 16-17 (2008) [hereinafter "Inspector General's Report"]; *see* Thomas Burr, Robert Gehrke & Mike Gorrell, "Feds Found Negligent," S.L. TRIB., Apr. 1, 2008, at A1.

²⁴⁵ S. COMM. ON HEALTH, EDUCATION, LABOR, AND PENSIONS, 110TH CONG., REPORT ON THE AUGUST 6, 2007 DISASTER AT CRANDALL CANYON MINE 5, 7 (2008), *available at* <http://kennedy.senate.gov/imo/media/doc/CCM%20Report%20Final%20FOR%20POSTING%20020608.pdf> [hereinafter "Senate Comm. Report"].

²⁴⁶ *Id.* at 27-36.

plan.²⁴⁷ The report found evidence that the operator was conducting unauthorized mining in violation of the plan in the days leading to the tragedy.²⁴⁸

The House Committee on Education and Labor released a memorandum from its Chairman, Representative George Miller. It was based on the committee staff's investigation and on an analysis conducted for the committee by engineering consultant Norwest Corporation of the Crandall Canyon roof control plan that MSHA approved on June 15, 2007.²⁴⁹ Chairman Miller reported that GRI made faulty assumptions about the condition of the barrier pillars and that the March 10 bounce should have been a red flag.²⁵⁰ He questioned whether GRI misled MSHA about the severity of the March 10 bounce.²⁵¹ Both the Senate and House committee reports recommended referral of this case to the Department of Justice for possible criminal prosecution.²⁵²

VI. POLICY RECOMMENDATIONS: FEDERALISM CONSIDERATIONS

The UMSC provided forty-five recommendations to Governor Huntsman and the Utah State Legislature. They were divided into five categories: state safety oversight, technical and research, education and training, testing and certification, emergency response and family support, and mine accident investigation.²⁵³ The following addresses some key recommendations from the standpoint of federalism considerations. The goal is to provide a better analytical framework for state policy choices.

The first recommendation was to establish an Office of Coal Mine Safety in the Utah Labor Commission "to maximize coal mine safety, coal mine accident prevention, and effective accident response."²⁵⁴ The office would coordinate coal safety in state government and be funded and staffed consistent with the responsibilities assigned to it.²⁵⁵ In response to this recommendation, the state legislature established this office when it passed the Coal Mine Safety Act of 2008.²⁵⁶ A coal mine safety director was appointed a few months later.²⁵⁷ The legislature also created the Mine Safety Technical Advisory Council to provide

²⁴⁷ *Id.* at 36-43, 55-60; see Mike Gorrell, *Warning Signs Went Unheeded*, S.L. TRIB., March 12, 2008, at A1.

²⁴⁸ Senate Comm. Report, *supra* note 245, at 68-72.

²⁴⁹ Memorandum from Congressman George Miller, Chairman, to Members of the House Comm. on Education and Labor (May 8, 2008), available at <http://edlabor.house.gov/publications/20080508CrandallMemo.pdf> [hereinafter "House Comm. Chair Report"].

²⁵⁰ *Id.* at 3-4.

²⁵¹ *Id.* at 5. See Ian Urbina, *Call for Criminal Inquiry Into Deadly Mine Collapse*, N.Y. TIMES, May 9, 2008, at A25.

²⁵² Senate Comm. Report, *supra* note 245, at 11; House Comm. Chair Report, *supra* note 249, at 4.

²⁵³ UMSC Report, *supra* note 11, at 50-63.

²⁵⁴ *Id.* at 50 (Recommendation 1).

²⁵⁵ *Id.*

²⁵⁶ UTAH CODE ANN. § 40-2-201 (Supp. 2008).

²⁵⁷ See Mike Gorrell, *State Gets First Coal Mine Safety Director*, S.L. TRIB., July 11, 2008, at C2.

technical advice on coal mine safety.²⁵⁸ The state thereby took the significant step of returning to participate in coal mine safety for the first time in over twenty years.

A. Inspection

The question of what this office and the state should do to advance coal mine safety takes us to some of the other key UMSC recommendations. The first one concerns whether the state should be involved in coal mine inspection. The UMSC recommended that the state “enter into an innovative enhanced safety partnership with” MSHA that would “involve state officials . . . in direct participation with MSHA inspection”²⁵⁹ The UMSC stopped short of recommending an independent state inspection program, although the Commission Chair wrote separately suggesting that the legislature should consider this step after seeking further input.²⁶⁰ The ensuing discussion pertains to both joint and separate inspection approaches.

UMSC learned that state inspection programs vary widely. Utah and Colorado have none. States such as Kentucky, Pennsylvania, and West Virginia have their own inspection and enforcement processes to complement MSHA. Kentucky, for example, has seventy to eighty inspectors. No state has an inspection presence or process as developed as MSHA.²⁶¹ MSHA considers Alabama, which has eight underground coal mines, five or six of them large longwall operations, to be the state most comparable to Utah, although Alabama also has about fifty surface mines. Alabama has a state inspection program that has been expanded in recent years, and the state also focuses its efforts on training.²⁶² At the time of the UMSC hearings, there were nine Utah underground coal mines in operation.

A state inspection system offers an opportunity to experiment with approaches that differ from the national MSHA system. If done on a collaborative basis with MSHA, the state would learn about the MSHA system as applied to in-state mines in ways that could inform other state safety measures and could produce state recommendations to improve and adapt MSHA inspections in Utah mines. It also would help the state determine whether a separate state system should be adopted. MSHA has a history of collaboration and information sharing with state inspection programs and offers to train state inspectors at its National Mine Health and Safety

²⁵⁸ UTAH CODE ANN. § 40-2-203 (Supp. 2008).

²⁵⁹ UMSC Report, *supra* note 11, at 50 (Recommendation 2).

²⁶⁰ Statement of Scott M. Matheson, Jr., Chair, Utah Mine Safety Comm’n, UMSC Report, *supra* note 11, at 80.

²⁶¹ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 13, 34-35, 48, 56.

²⁶² See Testimony of Richard A. Gates, MSHA Coal Mine Safety and Health, District 11 Manager and Crandall Canyon Investigation Leader, MSHA, UMSC Hearing, Nov. 20, 2007, at 51-54, 83; Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 13-14, 53-54; Testimony of Mike Dalpiaz, International Vice President, District 22, United Mine Workers of America, UMSC Hearing, Jan. 3, 2008, at 157-59.

Academy in Beckley, West Virginia.²⁶³ A state inspection system would facilitate further innovation, including the development of different risk-based and targeted inspection strategies carefully tailored to Utah mining conditions. It could focus on highly hazardous conditions and the leading causes of injuries and fatalities.

State inspection participation also may bring efficiency gains by filling gaps in the MSHA inspection program. A study leading up to passage of the Federal Mine Safety Act of 1977 showed that devoting more resources to inspection was associated with declining fatalities.²⁶⁴ A Department of Labor Inspector General's report issued three months after the Crandall Canyon disaster disclosed that MSHA had not performed required underground coal mine inspections in fifteen percent of the mines. MSHA could not demonstrate that all critical inspection activities were performed at Crandall Canyon, and three of the inspections had "significant inspection and supervisory deficiencies."²⁶⁵ A year later, MSHA reported that for the first time in its thirty-one-year history, all required regular inspections were completed in fiscal year 2008.²⁶⁶ State participation should supplement rather than duplicate federal efforts. In addition, state involvement may provide the regulatory flexibility that would allow for a successful mix of punishment and persuasion to improve safety.²⁶⁷

By involving state officials, coal operators, local labor officials, state-level technical experts, and community resources, state inspection could further the value of community empowerment in improving safety. State inspection also may further the goal of government accountability for safeguarding the safety of the state's coal mines. The unique conditions in Utah coal mines call for an inspection program tailored to the diverse mining circumstances of the state, and the state should have a strong incentive to design such a program.

Finally, whether the state program is carried out jointly with MSHA or separately, it would provide an "additional pair of eyes," something MSHA officials welcomed at the UMSC hearings to enhance the inspection process. MSHA Administrator for Coal Mine Safety and Health Kevin Stricklin explained,

[W]hen you're operating 24/7, MSHA's probably present only about five percent of the time at the mine site. So if we can work

²⁶³ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 3-4, 22.

²⁶⁴ See Michael S. Lewis-Beck & John R. Alford, *Can Government Regulate Safety: The Coal Mine Example*, 74 AM. POL. SCI. REV. 745, 747-51 (1980).

²⁶⁵ U.S. DEP'T OF LABOR, OFFICE OF THE INSPECTOR GENERAL, OFFICE OF AUDIT, REPORT NO. 05-08-001-06-001, UNDERGROUND COAL MINE INSPECTION MANDATE NOT FULFILLED DUE TO RESOURCE LIMITATIONS AND LACK OF MANAGEMENT EMPHASIS 2, 6, 20-22 (2007); see Robert Gehrke, *MSHA Wasn't Thorough, Says Labor Report*, S.L. TRIB., Nov. 17, 2007, at A10.

²⁶⁶ Press Release (08-1800-NAT), MSHA, Aggressive New Program Achieves 100 Percent Completion of MSHA Annual Mine Inspections (Dec. 10, 2008), <http://www.msha.gov/MEDIA/PRESS/2008/NR081210.asp> (last visited Dec. 11, 2008); see Lee Davidson, *Mine Inspectors Hit 100 %*, DESERET NEWS, Dec. 11, 2008, at A14.

²⁶⁷ See JOHN BRAITHWAITE, TO PUNISH OR PERSUADE: ENFORCEMENT OF COAL MINE SAFETY 117-18 (1985).

with the state agency and kind of coordinate and increase that to ten percent, we feel the mine is a safer operating mine when there is presence of a state or an MSHA person at the mine.²⁶⁸

One safety expert, noting the wave of significant expected retirements, pointed to the replacement of the inspectorate and all mining positions with less experienced personnel as indicating the need for “more eyes at the mine site.”²⁶⁹ More eyes through additional inspection may provide the monitoring of mining plans that was lacking at Crandall Canyon.

State inspection also would further dynamic federalism by using more than one level of government to address mine safety. As Robert Ferriter of the Colorado School of Mines put it, “The greatest deterrent to bad operators performing in an unsafe way is the presence of inspectors, and if both State and Federal inspectors are present, then scrutiny is higher.”²⁷⁰ Moreover, the state’s “additional pair of eyes” would not only be looking at coal operations for safety but also would serve a watchdog role to ensure MSHA is performing its safety responsibilities. The inspection record suggests there had been a shortfall in safety enforcement before the tragedy: during the months following the Crandall tragedy, MSHA issued over 1,300 safety violations in Utah’s underground mines, a higher amount than the previous four years’ average. At least 368 were considered “significant and substantial” threats to life and health.²⁷¹

The countervailing considerations regarding state inspection include the risk that the state would duplicate federal efforts, impose undue burdens and delays on the operators, and not add to coal mine safety.²⁷² J. Brett Harvey, CONSOL Energy CEO, expressed the following concern: “While there is some truth to the idea that a set of extra eyes is better, it is only better if they enforce the same set of laws and interpret the issues in the same way.”²⁷³ Duplication, uncertainty, and state budget considerations were cited as reasons for the State of Utah to disband its safety

²⁶⁸ Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 14. “[W]e think there’s a lot of benefit to a state agency participating in mine inspection.” *Id.* at 60. MSHA head Richard Stickler told the Salt Lake Tribune: “Two eyes are better than one, two people checking [are] better than one, two agencies [are] better than one.” See Robert Gehrke, *MSHA Boss Says Risks Unavoidable*, S.L. TRIB., Oct. 12, 2007, at A5.

²⁶⁹ Testimony of Joseph A. Main, International Mine Safety Consulting, UMSC Hearing, Jan. 3, 2008, at 115.

²⁷⁰ *Current Mine Safety Disasters: Issues and Challenges: Hearing Before the S. Comm. on Health, Education, Labor and Pensions*, 110th Cong. (2007) (responses of Robert L. Ferriter, Director of Mine Safety and Health Program, Colorado School of Mines, to questions from Senator Orrin G. Hatch following the hearing) (on file with author) [hereinafter “Ferriter Responses”].

²⁷¹ See Lee Davidson, *Despite Crandall Deaths, Citations Pile Up*, DESERET NEWS, Aug. 2, 2008, at A1.

²⁷² See Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 28-30.

²⁷³ Testimony of J. Brett Harvey, President and Chief Executive Officer, CONSOL Energy, Inc., UMSC Hearing, Jan. 3, 2008, at 11. See *id.* at 95.

program after the Federal Mine Safety Act was enacted in 1977,²⁷⁴ and the same reasons were offered against re-establishing it.

The UMSC received industry testimony that the MSHA inspection system is thorough and comprehensive,²⁷⁵ that state inspection in the past has been superficial and ineffective,²⁷⁶ and that “[i]f the state [were] to get involved with that type of a program, it would have to be much greater than it was before to provide any service whatsoever.”²⁷⁷ UMSC witnesses questioned whether the state could recruit trained, competent inspectors when MSHA is aggressively trying to hire them.²⁷⁸

UMSC witnesses from Utah coal mining country also expressed concern about state involvement interfering with or suppressing economic growth and the vitality of the coal industry.²⁷⁹ As one miner with thirty-seven years of experience put it,

[Y]es, we need to look out for the safety of the coal miners, but we also need to be careful that we protect our livelihood and we don't put too much restraint on the coal operator where he cannot function. And as we look at some of the laws we got, you can see how some of them are kind of ridiculous.²⁸⁰

²⁷⁴ See Testimony of John S. Kirkham, UMSC Hearing, Nov. 20, 2007, at 189-94. See *supra* notes 155-63 and accompanying text.

²⁷⁵ “MSHA does a very, very thorough job in MSHA inspections. Right now to date, the Dugout Canyon Mine has 245 inspections days year to date, with roughly 265 days of the year. I mean, we literally have an MSHA inspector on the property every day.” Testimony of Ray Bridge, Safety Manager, Dugout Canyon Mine, Arch Coal, Inc., UMSC Hearing, Sept. 25, 2007, at 17. See also Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 27-28.

²⁷⁶ The “state mine inspectors would come to the mine one or two days a year. They would go around and find a few minor items, write up a report, send it to you; and that's all there was to it. There was not much substance to the program at all.” Testimony of Ray Bridge, Safety Manager, Dugout Canyon Mine, Arch Coal, Inc., UMSC Hearing, Sept. 25, 2007, at 20. “I have 39 years basis [in mining] and frankly, . . . I was not impressed when the State of Utah had mine inspectors back early in my career.” Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 45. A representative of the only underground operator in Wyoming reported that the state inspector there visited the mine seven or eight times in three years. Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 76.

²⁷⁷ Testimony of Kevin Tuttle, Manager of Health and Safety, Energy West Mining Company, UMSC Hearing, Nov. 13, 2007, at 66.

²⁷⁸ “[Y]ou don't want to create a regulatory agency when you don't have competent people to put in it” Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 132. See also Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 28; Testimony of John S. Kirkham, UMSC Hearing, Nov. 20, 2007, at 193. MSHA managed to recruit 273 inspectors during 2006-2007. See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 35-38.

²⁷⁹ See, e.g., Testimony of Gary Kofford, Emery County Commissioner, UMSC Hearing, Sept. 25, 2007, at 88-91. See also Mike Gorrell, *Folks: Slapping Coal Industry Not Answer*, S.L. TRIB., Sept. 26, 2007, at A1.

²⁸⁰ Testimony of Warren Oviatt, UMSC Hearing, Sept. 25, 2007, at 123.

An important question is whether state inspection would send regulatory mixed signals to industry and induce inefficient operator compliance measures that would compromise safety efforts. The UMSC heard concerns about having two supervisory authorities: “One of the problems that you have when a number of entities regulate something, one of the downfalls can be that it ends up nobody regulates it.”²⁸¹ Mining industry attorney John Kirkham argued for having one entity clearly responsible for regulatory authority—a “single chain of command.”²⁸² But he did not rule out a watchdog role for the state to ensure that MSHA meets its inspection and mine plan approval responsibilities.²⁸³

A related concern is the cost to the state of establishing an inspection program and whether that cost would bring safety gains. MSHA reported in November, 2007 that the annual operating expense of the MSHA inspection field office in Price, Utah, based on about ten inspectors, plan supervisors, and support staff, was about \$1.8 million.²⁸⁴ Since Crandall Canyon, MSHA increased inspector staffing in the Price office from eleven to seventeen personnel.²⁸⁵ A further cost consideration is the potential liability to the state or state officials.²⁸⁶

Another question is whether MSHA can implement its inspection program in a manner that would produce community involvement to at least the same extent as state inspection. Finally, the state should assess whether MSHA can tailor its program to meet the unique safety needs of Utah mines.

B. Mine Plan Approval

The UMSC recommended that Utah establish a state-level technical advisory council, including mining engineers from academia and industry, and that the council should develop a procedure for independent review of proposed mining plans in the context of challenging mining conditions in Utah mines.²⁸⁷ This recommendation stems in large part from the bounce-prone conditions in Utah mines and from the failure of the mine plan approval process leading to the Crandall Canyon disaster.

Both the MSHA investigation and the independent review of MSHA, as well as other investigations and reviews, stressed the inadequacy of the mine plan and

²⁸¹ Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 43.

²⁸² Testimony of John S. Kirkham, UMSC Hearing, Nov. 20, 2007, at 190.

²⁸³ *Id.* at 197-98.

²⁸⁴ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 22-23. “[W]ith proper coordination and cooperation, states can have a positive impact on mine safety that corresponds directly to the size of the staff and the amount of time spent at the mine.” *Id.*

²⁸⁵ See Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 28; Testimony of Neil L. Getzelman, President, Interwest Mining Co., UMSC Hearing, Jan. 3, 2008, at 44.

²⁸⁶ See Testimony of John S. Kirkham, UMSC Hearing, Nov. 20, 2007, at 191-92.

²⁸⁷ UMSC Report, *supra* note 11, at 51-52 (Recommendations 6 & 7).

the defects in its preparation, review, approval, and monitoring as the causes of the Crandall Canyon disaster.²⁸⁸ Following the accidents, the Senate Committee on Health, Education and Pensions asked NIOSH to review Agapito's engineering analysis. NIOSH reported back that deep cover and low calculated stability factors in the barrier pillars indicated "an elevated risk of bumps" associated with the retreat barrier pillar mining at Crandall Canyon.²⁸⁹

J. Brett Harvey, Consol CEO, told the UMSC that the major issues from a risk analysis standpoint concern the design of the mine—ventilation and roof control—more than inspections as the means to stop significant mine disasters.²⁹⁰ The risks associated with bumps and fires call for a high level of scrutiny, including risk analysis of coal mine bump potential.²⁹¹ One safety expert told the UMSC that effective mine plan approval is even more important in a place like Utah, where "we have pretty well mined out the easy stuff."²⁹² The criteria to determine when and how state-supported independent review would be conducted should be determined through recommendations from the technical advisory council, including geotechnical modeling.

Mine plan review and approval is conducted in other coal mining states, although most states accept MSHA's required mining plans. Other states, such as West Virginia, have their own independent mine plan review process. Kentucky requires specific roof control plans in addition to MSHA plans. In Virginia, MSHA and the state jointly approve a single roof control plan.²⁹³ Following the Crandall Canyon disaster, MSHA rescinded all retreat mining plans for operations deeper than 1,500 feet, subject to later possible approval after a thorough technical review.²⁹⁴

The notion of a state-facilitated independent review serves the federalism interest of state innovation because such a review may use or apply criteria and methods that vary from MSHA. One expert stressed to the UMSC the advantage of the state insisting on a thorough risk assessment as part of the geotechnical analysis.²⁹⁵ Although it may not add efficiency to the regulatory process, independent review would provide a checking function to a collaborative operator-

²⁸⁸ See *supra* notes 223-53 and accompanying text.

²⁸⁹ OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH, CENTERS FOR DISEASE CONTROL AND PREVENTION, U.S. DEP'T OF HEALTH AND HUMAN SERVICES, EVALUATION AND CONTROL OF COAL BUMPS (2007); see also Inspector General's Report, *supra* note 244, at 9-10; Robert Gehrke, *Report Says Flawed Computer Modeling Failed To Show Risks*, S.L. TRIB., Oct. 3, 2007, at A1.

²⁹⁰ Testimony of J. Brett Harvey, President and Chief Executive Officer, CONSOL Energy, Inc., UMSC Hearing, Jan. 3, 2008, at 48.

²⁹¹ See Ferriter Responses, *supra* note 270.

²⁹² Testimony of Joseph A. Main, International Mine Safety Consulting, UMSC Hearing, Jan. 3, 2008, at 115.

²⁹³ Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 55-56, 75-76. Mr. Stricklin could not answer what happens when Virginia and MSHA disagree on roof control plan approval because it had not happened. *Id.* at 76.

²⁹⁴ *Id.* at 29-30.

²⁹⁵ Comments submitted to the UMSC by R. Larry Grayson, Professor of Energy and Mineral Engineering, George H., Jr., and Anne B Deike Chair of Mining Engineering, Pennsylvania State University, Sept. 22, 2007 (on file with author).

MSHA process that appeared prone to agency capture in the case of Crandall Canyon.²⁹⁶ By conducting a state-facilitated review drawing expertise from the affected area, an element of community empowerment is added to a process that has been the exclusive domain of the operator and the federal agency.

An independent state review builds greater accountability in the mine plan review process and increases the prospect that the unique circumstances involved are addressed.²⁹⁷ Dynamic federalism is served through more than one level of government scrutinizing this critical issue. The MSHA review “would be enhanced if other ‘eyes’ scrutinized the plan from different perspectives; for example, by a state enforcement agency.”²⁹⁸ The technical challenges of mine plan approval may point to a more collaborative than independent review, which is the approach used in Virginia. Again, whether collaborative or independent, a state review process would provide an additional pair of eyes as a safety safeguard, perhaps with the state using a different or adjusted modeling system to arrive at a second opinion.

The argument against an independent state review is that it is duplicative of the MSHA process and may impose undue compliance burdens on industry.²⁹⁹ Industry officials expressed concern to the UMSC that dual approval of mine plans would unduly delay operations.³⁰⁰ MSHA reported that the delay concern has been addressed in other states with a memorandum of understanding between MSHA and the state on time deadlines.³⁰¹ Technical considerations may indicate that the combination of expertise necessary to perform an effective mine plan review is not in sufficient supply at the state level,³⁰² or that state resources required to develop and retain that expertise are cost-prohibitive. Placing mine plan approval authority in federal and state agencies may blur lines of accountability. Because operators develop mine plans for specific circumstances, MSHA arguably is in at least as strong a position to evaluate the particular details of a plan and respond to unique local concerns as an independent state review. However, MSHA was criticized for

²⁹⁶ See Testimony of Mike Dalpiaz, International Vice President, District 22, United Mine Workers of America, UMSC Hearing, Jan. 3, 2008, at 154-57, 161-62. As for the engineering firm that prepared the mining plan for the Crandall Canyon barrier pillar mining, Mr. Dalpiaz said, “You can get an engineering group to pretty much say what you want them to say.” *Id.* at 180-81.

²⁹⁷ “[M]ost of the difference lies in the geologic settings that we find these mines in.” Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 64.

²⁹⁸ Ferriter Responses, *supra* note 270.

²⁹⁹ “[T]he Code of Federal Regulations has been adopted and is now working over thirty years, is very complete. It is very thorough.” Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 64.

³⁰⁰ “The heart of our concern with a state mine plan approval requirement resides in the time-sensitive nature of the process.” Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 33. See also Testimony of Kevin Tuttle, Manager of Health and Safety, Energy West Mining Company, UMSC Hearing, Nov. 13, 2007, at 68-72; Letter from Neil L. Getzleman, President, Interwest Mining Co. & Gene E. DiClaudio, President, Arch Western Bituminous Group to Scott M. Matheson, Jr., Chair, UMSC, Dec. 17, 2007 (on file with authors).

³⁰¹ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 75-76.

³⁰² See Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 34.

its failure to consider input from its own local inspectors during the review of the Crandall Canyon roof control plans.³⁰³

C. Education, Training, and Research

The UMSC made numerous recommendations regarding education, training, and research. The education and training proposals were based on numerous reports about significant impending retirements and loss of safety experience in all areas of coal mining and on the need to train the next generation of Utah coal personnel to meet the unique challenges of Utah mining, especially the safety challenges.³⁰⁴ The research proposals were based on the need to address safety issues specific to Utah and other underground coal mining states susceptible to bounce conditions.

1. Education and Training

The broadest policy consensus in presentations before the UMSC was for enhanced education and training for miners. Data have shown that improved training can reduce mining accidents.³⁰⁵ MSHA regulations specify training subjects to be covered, and MSHA provides training grant funds to states. State grant recipients must submit a training plan for MSHA district manager approval and provide training through MSHA-approved instructors. The state must follow the plan, but it can add to it.³⁰⁶ UMSC witnesses who were opposed to independent state regulation and inspection nonetheless supported the state taking the lead in training.³⁰⁷ Operator and miner testimony before the UMSC supported more state

³⁰³ See Inspector General's Report, *supra* note 244, at 10.

³⁰⁴ "Our Industry is undergoing a major demographic transition." Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 23. "We suffer in this state just like we do throughout the nation with an aging work force, a work force that is bubbling and ready to retire." Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 60. "We are in a crisis." Testimony of Dale Evans, Chairman of the Mining Department, Division of Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 40 (speaking about turnover in the mining work force from retirements). One presenter estimated up to seventy percent of current coal miners will retire in the next ten years. See Testimony of Robert Topping, Program Director, Western Energy Training Center, UMSC Hearing, Oct. 2, 2007, at 54-55, 66. See also Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 40. "We are going through a massive change in this mining industry with regard to an exodus of the experienced workers that have brought about the safest records in mine safety." Testimony of Joseph A. Main, International Mine Safety Consulting, UMSC Hearing, Jan. 3, 2008, at 113.

³⁰⁵ See BRAITHWAITE, *supra* note 267, at 6.

³⁰⁶ See Testimony of Dale Evans, Chairman of the Mining Department, Division of Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 29-30.

³⁰⁷ "I think the State of Utah should take the lead in establishing training programs. . . . I don't think that's something you can wait in your state for something to trickle down from the federal level." Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and

resources invested in training.³⁰⁸ MSHA identified training and the monitoring of training as the area of greatest potential for effective federal-state collaboration to promote mine safety.³⁰⁹

The MSHA National State Grants Program encourages states to conduct training and certification programs and provides funding for such training through, for example, community colleges.³¹⁰ Grantees provide annual refresher training, new miner training, and newly hired experienced miner training. The MSHA grant requires about twenty-five percent in state matching funds. The Utah College of Applied Technology receives the grant,³¹¹ and the College of Eastern Utah (CEU) and the Southeast Applied Technology College in Price, Utah, have been key training providers. They have developed a flexible “open-entry, open-exit” program to accommodate students.³¹²

The Western Energy Training Center (WETC), an innovative training facility in Helper, Utah that has teamed up with CEU and industry, offers an excellent setting and resource to meet coal mine safety educational needs. Until recently, the Utah Labor Commission received a small part of the grant for its modestly-funded certification program.³¹³ The operators and other private and non-profit providers also deliver required MSHA training to new and experienced miners.³¹⁴ One indicator of the advisability of a stronger state role in this area is a May 2007 GAO report concluding that MSHA does not adequately monitor instructors or training.³¹⁵

Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 46. *See also* Testimony of Neil L. Getzelman, President, Interwest Mining Co., UMSC Hearing, Jan. 3, 2008, at 44.

³⁰⁸ *See* Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 23-26, 80; Testimony of Ray Bridge, Safety Manager, Dugout Canyon Mine, Arch Coal, Inc., UMSC Hearing, Sept. 25, 2007, at 20; Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 66-69; Testimony of Brad Timothy, UMSC Hearing, Sept. 25, 2007, at 109; Testimony of Warren Oviatt, UMSC Hearing, Sept. 25, 2007, at 126. One commentator noted that “[i]ndustry lobby groups are forever urging a shift of government priority from enforcement to training.” BRAITHWAITE, *supra* note 267, at 7.

³⁰⁹ Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 10, 28.

³¹⁰ “The grantee provides annual refresher training, new miner training, and newly hired experienced miner training to all miners and contractors throughout the nation.” Testimony of Dale Evans, Chairman of the Mining Department, Division of Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 13.

³¹¹ For the 2008 grant period, the State of Utah was allocated \$166,000 from MSHA, and the state provided a match of \$48,000. Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 17.

³¹² *See* Testimony of Miles Nelson, Associate Vice President for Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 11.

³¹³ *See* Testimony of Pete C. Hackford, Director, Division of Boiler and Elevator Safety & Miner Certification, Utah Labor Comm’n, UMSC Hearing, Oct. 2, 2007, at 116.

³¹⁴ *See* Testimony of Miles Nelson, Associate Vice President for Workforce Education, College of Eastern Utah, UMSC Hearing, Nov. 20, 2007, at 184-85.

³¹⁵ *See* GOVERNMENT ACCOUNTABILITY OFFICE, GAO-07-622, MINE SAFETY – BETTER OVERSIGHT AND COORDINATION BY MSHA AND OTHER FEDERAL AGENCIES COULD IMPROVE SAFETY FOR UNDERGROUND COAL MINERS 21-23 (2007), available at <http://www.gao.gov/new.items/d07622>.

The UMSC recommended that the state support training efforts to produce a well-trained and safety-conscious work force. It identified WETC as offering an excellent opportunity to establish a high quality training operation for Utah and the Intermountain region. However, the UMSC received testimony that Utah's program is understaffed and underfunded, especially compared to other states that have funded and developed training programs which exceed MSHA's minimum requirements, including apprenticeship and internship programs.³¹⁶ CEU officials think the state should do more than the minimum MSHA requirements.³¹⁷

The UMSC recommended that the state should seek greater flexibility for miner training programs that are tailored to the safety needs of Utah miners. It further recommended that the state should design and require such programs to exceed MSHA standards where Utah mining conditions warrant it.³¹⁸ One training expert from the Colorado School of Mines said that "Utah and Colorado miners would benefit from improved training on the threat from coal mine bumps."³¹⁹

Training for miners and managers should be focused on hazard prevention based on the leading causes of death and injury in the mines. MSHA recently announced its Safe Targets Training Program to target training on the most common causes of repeat fatal accidents.³²⁰ A state counterpart would seem advisable. As CEU's Mining Department Chairman explained, "[H]ere in the West, we have the unique problem of mining under large, 2000-plus feet of cover; and . . . I think it's critical that we get these people together to develop a curriculum and let the state grants program get involved in putting it together in a professional manner."³²¹ MSHA has offered to work with the state to develop training that is targeted at work in mines operating under deep cover.³²²

The recommendations for more rigorous training are closely related to UMSC proposals for testing and certification. The Commission suggested expanding the number of mining positions requiring certification and instituting the certification of new miners.³²³

pdf [hereinafter "GAO Mine Safety Report"].

³¹⁶ See Testimony of Dale Evans, Chairman of the Mining Department, Division of Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 17-18, 123.

³¹⁷ See Testimony of Miles Nelson, Associate Vice President for Workforce Education, College of Eastern Utah, UMSC Hearing, Nov. 20, 2007, at 169-70.

³¹⁸ UMSC Report, *supra* note 11, at 56 (Recommendations 17 & 18).

³¹⁹ Ferriter Responses, *supra* note 270.

³²⁰ Press Release (08-1450-NAT), MSHA Announces Major Initiative to Bolster Mine Safety – Safety Targets Training Program to Focus on Eliminating Major Causes of Fatalities (Oct. 16, 2008), <http://www.msha.gov/MEDIA/PRESS/2008/NR081016.asp> (last visited Dec. 11, 2008).

³²¹ Testimony of Dale Evans, Chairman of the Mining Department, Division of Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 25.

³²² See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 45.

³²³ UMSC Report, *supra* note 11, at 58-59 (Recommendations 27, 28, & 29). One of CEU's training instructors told the UMSC: "I believe that the mine certification test should address today's trends and the present environment, not something that happened a long time ago. . . . I think we should have a more rigorous test." Testimony of Darwin Guymon, UMSC Hearing, Nov. 13, 2007, at 110. See also Testimony of Rudy Madrigal, UMSC Hearing, Nov. 13, 2007, at 188-90.

The UMSC also recommended stronger state support for mining engineering education at the College of Mines and Earth Sciences at the University of Utah,³²⁴ which has a statutory mandate to provide instruction in mining, metallurgy, and “other branches of engineering that pertain to mining.”³²⁵ The nation’s twelve accredited mining engineering programs are graduating only 130 of the 300 mining engineers needed in the United States. The mining engineering faculties need to be expanded with strong research support.³²⁶

The program at the University of Utah works with Utah mines and prepares its graduates for Utah mining conditions. Over eighty percent of the graduates stay in Utah, and more than half work in the coal industry.³²⁷ Experienced geotechnical engineers are needed to address the unique safety issues of coal mining in Utah.³²⁸ Post-Crandall Canyon disaster industry support for an endowed professorship at the University of Utah dedicated to mine safety is a positive step to meet training needs and also to further research as set forth below.³²⁹

2. Research

The UMSC’s research proposals included a research institute and enhanced seismic monitoring. The UMSC proposed that the state establish a Research Institute for Mine Safety and Productivity, which would concentrate on developing improved methods for mining under deep cover and other challenging conditions in Utah and comparable mining states. The need to upgrade technical capacity to analyze roof control plans for conditions and mining practices associated with bump occurrence was stressed following Crandall Canyon because, in the years preceding Crandall, significant new research projects on bump prevention had not occurred.³³⁰

Other research projects could include mine stress detection, ground control safeguards, planning ventilation systems, simulating mine fires, 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 institute would seek grants and collaborative working relationships with NIOSH and research counterparts in other coal mining states.³³¹ One leading Utah

³²⁴ UMSC Report, *supra* note 11, at 55 (Recommendation 13). “It is prudent that the State of Utah, in partnership with the industry, support efforts to increase both enrollment and faculty in the University’s mining engineering programs.” Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 25-26.

³²⁵ UTAH CODE ANN. § 53B-17-401(3) (2006).

³²⁶ See Testimony of Michael K. McCarter, Professor and Chairman of Mining Engineering, University of Utah, UMSC Hearing, Nov. 13, 2007, at 20.

³²⁷ Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 136.

³²⁸ See Ferriter Responses, *supra* note 270.

³²⁹ See Mike Gorrell, *Industry Backs U. Mine Safety Endowment*, S.L. Trib., Feb. 3, 2009, at E1.

³³⁰ See Ferriter Statement, *supra* note 21. The federal government similarly has not addressed gaps in research on environmental issues. See Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L. J. 159, 167 (2006).

³³¹ UMSC Report, *supra* note 11, at 52 (Recommendation 8).

mine executive said that “we need to fund increased post-graduate research that focuses on the unique characteristics of Utah’s mines.”³³²

The UMSC’s seismic monitoring proposals included equipment for effective regional-scale seismic monitoring of all areas of active coal mining and equipment to enhance seismic monitoring at individual bounce-prone mines. The University of Utah Seismograph Stations program is a regional seismic network and works closely with the U.S. Geological Survey and its seismologists—a collaborative state-federal partnership.³³³ The next step would be to invest in high-resolution seismic monitoring capacity at individual mines involving both in-mine and surface instruments—an intensive system used in Australia, Eastern Europe, and South Africa.³³⁴ Walter J. Arabasz, Director of the University of Utah Seismograph Stations, cautioned that enhancement of seismic monitoring depends on the needs and commitment of the mine operators and the costs involved. He also stressed that seismic monitoring can provide useful information but is not a “panacea for . . . predicting damage in coal mines.”³³⁵

The Commission also recommended, based on Dr. Arabasz’s suggestion, using trained personnel located in Utah’s coal country to participate in real-time monitoring of mine-seismicity data to advance mine safety.³³⁶ The monitoring function would then be conducted by community members who have the most meaningful interest and stake in the data and its analysis.³³⁷ MSHA has recognized the federalism benefit of the University of Utah developing enhanced seismic monitoring because the Utah seismologists operate “in the backyard where [Crandall] occurred. Who would know better than someone who actually monitors this?”³³⁸ NIOSH has conducted seismic monitoring research at Utah’s Willow Creek Mine³³⁹ and would be a natural partner with state-supported efforts.

³³² Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 25.

³³³ See Testimony of Walter J. Arabasz, Director of the University of Utah Seismograph Stations, Research Professor of Geology and Geophysics, University of Utah, UMSC Hearing, Nov. 20, 2007, at 206, 225.

³³⁴ *Id.* at 227-29. One of the industry witnesses pointed to technology development overseas: “Australia’s a prime example of how technology and research development continues to work in a cooperative atmosphere, and move along for the good of the whole industry.” Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 70.

³³⁵ See Testimony of Walter J. Arabasz, Director of the University of Utah Seismograph Stations, Research Professor of Geology and Geophysics, University of Utah, UMSC Hearing, Nov. 20, 2007, at 229.

³³⁶ UMSC Report, *supra* note 11, at 53-54 (Recommendation 10). See Testimony of Walter J. Arabasz, Director of the University of Utah Seismograph Stations, Research Professor of Geology and Geophysics, University of Utah, UMSC Hearing, Nov. 20, 2007, at 227, 232-33.

³³⁷ See *id.* at 237.

³³⁸ Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 65.

³³⁹ See Testimony of Walter J. Arabasz, Director of the University of Utah Seismograph Stations, Research Professor of Geology and Geophysics, University of Utah, UMSC Hearing, Nov. 20, 2007, at 230.

The potential federalism benefit of state-level innovation from this combination of training and research proposals seemed significant to the UMSC. Designing the educational and training programs and the research projects to address local conditions appears to offer an efficient and effective means to foster safety in the workforce and in the mines and to meet the unique needs of Utah mining safety. The active participation of community members in these various endeavors promotes community awareness and empowerment. For example, training and involving coal country citizens in seismic monitoring would invest the community more deeply in protecting miner safety. By lodging responsibility for training and research in local institutions and offering the flexibility to address local needs, accountability for mine safety can be enhanced at the state and local levels.

The start-up costs and economies of scale for significant and effective research must be weighed carefully. The state's capacity for developing more effective training standards than the MSHA requirements must also be assessed relative to cost and other resources. CEU officials estimated needing annual funding of \$2 million and one-time funding of \$3 million for equipment to implement an effective training program at WETC.³⁴⁰ Duplication and cost concerns are significant and may ultimately argue against some of these proposals, but the federalism benefits otherwise point to an active state role in these areas as a positive supplement to the federal regulatory system.

D. Intergovernmental and Inter-Agency Communication and Cooperation

Although MSHA is the lead regulatory agency for coal mine safety, many states administer coal safety programs, and some states have substantial inspection and regulatory operations. Even in a state like Utah, which halted its coal mine safety program in the 1980s, other federal and state agencies, especially the land management agencies, have regulatory roles in the coal mining area. They do not have responsibility for safety regulation, but their work with the operators and the mines brings them into contact with safety concerns.³⁴¹

For example, a BLM inspector who visited the Crandall Canyon Mine in the years leading to the accident noted serious concerns on several occasions about the barrier pillar mining in his inspection reports, but the concerns were not shared with MSHA.³⁴² The UMSC hearings indicated a lack of communication among the

³⁴⁰ See Testimony of Kevin Walthers, Vice President for Finance and Administration, College of Eastern Utah, UMSC Hearing, Nov. 20, 2007, at 165-66; Testimony of Miles Nelson, Associate Vice President for Workforce Education, College of Eastern Utah, UMSC Hearing, Nov. 20, 2007, at 169-70.

³⁴¹ See Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 23-25.

³⁴² See Independent Review of MSHA, *supra* note 219, at 8; Inspector General's Report, *supra* note 244, at 11-13; Senate Comm. Report, *supra* note 245, at 43; Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 62-64. Mr. Stricklin disclosed that MSHA and BLM were discussing a memorandum of understanding to improve coordination and communication. *Id.* at 44, 63, 80. BLM officials reported on those

public agencies with regulatory or oversight responsibilities for coal mining, a point both MSHA and BLM witnesses acknowledged. They also welcomed a coordinated communication approach.³⁴³ MSHA and BLM signed a memorandum of understanding in April 2008 to improve coordination and communication between the agencies to advance mine safety.³⁴⁴

The UMSC made a straightforward but important recommendation for the state to initiate a Coal Mine Safety Roundtable series for coordination and information sharing about safety issues and concerns. Participation would include representatives of MSHA, state and federal land management agencies—BLM, USFS, OGM, and SITLA—coal operators, and miner representatives. The Commission proposed that the Roundtable meet as needed but at least quarterly to share safety information and concerns and discuss practical solutions to safety problems.³⁴⁵ Both Richard Gates, the head of MSHA's Crandall Canyon investigation team, and Sherrie Hayashi, Utah Labor Commissioner and the state's representative on the team, told the UMSC, based on their experience with the investigation, that a state-facilitated forum for communication among MSHA, the mine operators, individual miners, and the other federal and state agencies would be potentially beneficial.³⁴⁶

The state taking the lead on better communication would further the innovation value of federalism; indeed, UMSC suggested that MSHA support it as a pilot project. The proposed approach would bring together multiple agencies with overlapping jurisdictions and operators and miners in a manner that should bring efficiency and effectiveness to collaborative safety policy. This joint effort would empower local stakeholders to participate and would bring greater accountability to the responsibility to share safety information. Having the agency personnel

discussions to the UMSC. *See* Testimony of Bob Anderson, Deputy Assistant Director for Minerals Realty and Resource Protection, Bureau of Land Management, UMSC Hearing, Dec. 11, 2007, at 18; Testimony of Kent Hoffman, Deputy State Director for Lands and Minerals, Bureau of Land Management, Utah State Office, UMSC Hearing, Dec. 11, 2007, at 21.

³⁴³ “[T]here are certainly . . . cases where more communication might help . . . ,” but “any communication process . . . has to be organized and . . . systematic.” Testimony of Thomas B. Faddies, Assistant Director-Minerals, State of Utah School and Institutional Trust Land Administration, UMSC Hearing, Oct. 22, 2007, at 28.

³⁴⁴ Memorandum of Understanding between the U.S. Dep’t of Labor Mine Safety and Health Admin. (MSHA) and the U.S. Dep’t of the Interior Bureau of Land Mgmt. (Apr. 8, 2008), <http://www.msha.gov/MSHAInfo/MSHABLMOU042008.pdf> (last visited Dec. 11, 2008).

³⁴⁵ UMSC Report, *supra* note 11, at 51 (Recommendation 4). The Senate Comm. Report, *supra* note 245, at 14 (to correct the lack of MSHA-BLM communication relating to Crandall, recommended that “each MSHA district should create an interagency mine safety task force” and “urge state and local agencies to participate”).

³⁴⁶ *See* Testimony of Richard A. Gates, MSHA Coal Mine Safety and Health, District 11 Manager and Crandall Canyon Investigation Leader, MSHA, UMSC Hearing, Nov. 20, 2007, at 150; Testimony of Sherrie Hayashi, Utah Labor Commissioner, UMSC Hearing, Nov. 20, 2007, at 149. BLM representatives testified that that this would be “a very good idea.” Testimony of Bob Anderson, Deputy Assistant Director for Minerals Realty and Resource Protection, Bureau of Land Management, UMSC Hearing, Dec. 11, 2007, at 31; *see* Testimony of Kent Hoffman, Deputy State Director for Lands and Minerals, Bureau of Land Management, Utah State Office, UMSC Hearing, Dec. 11, 2007, at 31-32.

operating on the ground in a particular state meet together on safety strengthens the potential to address particular safety needs and secures the benefits of dynamic federalism. It is difficult to identify a federalism consideration that seriously counsels against this course of action. Indeed, BLM has been hosting meetings with this goal in mind.

E. Mine Disaster Emergency Response

From Scofield to Crandall Canyon, the local community in Utah has been involved in emergency response to coal mine disasters, from mine rescue to family support. Long before MSHA regulated mine rescue teams and emergency response plans, a Carbon County company doctor in the 1920's issued his own list of "don'ts" for mine rescue teams, including a ban on chewing tobacco when wearing helmets.³⁴⁷ Women rushed canaries to rescue teams to check for remaining gas following explosions.³⁴⁸

Emergency response is now clearly much more effective and sophisticated, but it still starts at the local level. In this area of coal mine safety, practical considerations point to action based on federalism. UMSC witnesses from industry and federal, state, and local government generally agreed on this point.

Federal law primarily governs emergency response and mine rescue, calling on "[e]very operator of an underground coal mine [to] ensure the availability of mine rescue capability for purpose of emergency rescue and recovery."³⁴⁹ The MINER Act of 2006 requires each underground mine to develop and update an emergency response plan with several key required elements,³⁵⁰ make two experienced mine rescue teams available to respond within one hour,³⁵¹ and notify MSHA within fifteen minutes of all accidents that pose a reasonable risk of death or serious injury.³⁵² One of the required elements of the emergency response plan is to "set out procedures for coordination and communication between the operator, mine rescue teams, and local emergency response personnel."³⁵³

Federal law also calls for MSHA to exercise control over rescue efforts in major mine disasters.³⁵⁴ In response to a disaster, MSHA typically issues a "103(k) order," which gives the agency approval authority for rescue procedures.

Despite federal regulations and federal control, emergency response to mine disasters is a cooperative endeavor that involves the operator and its mine rescue

³⁴⁷ See Papanikolas, *supra* note 7, at 122.

³⁴⁸ See *id.* at 123.

³⁴⁹ 30 C.F.R. § 49.1 (2008).

³⁵⁰ 30 U.S.C. § 876 (2006). One mine manager referred to these elements—which include post-accident communication, tracking, and breathable air—as "dictated by MSHA regulations." Testimony of Wes Sorenson, General Manager, Skyline Mine, Arch Coal, UMSC Hearing, Dec. 11, 2007, at 67. See Testimony of Ralph Sanich, Safety Manager for Interwest Mining, UMSC Hearing, Jan. 3, 2008, at 129-36.

³⁵¹ 30 U.S.C. § 825(e) (2006).

³⁵² *Id.* § 813(j).

³⁵³ *Id.* § 876(b)(2)(E)(vi).

³⁵⁴ *Id.* §§ 811-826.

teams, local emergency responders, local community leaders and organizations, state agencies, and MSHA. MSHA regulations require the operator to coordinate with local emergency responders in the formulation of the mine's emergency response plan.³⁵⁵

The first responders to a mine disaster are virtually always local law enforcement and emergency management personnel.³⁵⁶ Ensuing rescue and family support operations invariably involve the local community and state support. That was the case at Crandall Canyon.³⁵⁷

The UMSC heard extensive testimony about the role of state and local government in response to Crandall.³⁵⁸ Witnesses praised Emery County Sheriff Lamar Guymon and his department for the prompt, professional, and effective way local law enforcement responded to and addressed the disaster.³⁵⁹ Witnesses also complimented Governor Huntsman and other state officials for their cooperation and support.

But Governor Huntsman and others stressed that the state lacked a blueprint to deal with Crandall that spelled out "roles and responsibilities."³⁶⁰ John Baza, Utah Director of Oil, Gas, and Mining, represented the state at the Crandall Canyon mine rescue site. He told the UMSC that the role of state government at Crandall "was undefined." Although the state provided logistical support to law enforcement agencies and various services to the miners' families, Mr. Baza said the Crandall experience pointed to the need for a better coordinated and collaborative working relationship with MSHA.³⁶¹

The UMSC hearing record suggested several ways the state could improve emergency response to coal mine disasters. Kevin Stricklin, MSHA Administrator for Coal Mine Safety and Health, told the UMSC that "MSHA and state mining programs have a rich history of collaborating on mine rescue and emergency

³⁵⁵ See Testimony of Wes Sorenson, General Manager, Skyline Mine, Arch Coal, UMSC Hearing, Dec. 11, 2007, at 73, 80-81.

³⁵⁶ The UMSC recommendations included at statement that 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." UMSC Report, *supra* note 11, at 60 (Recommendation 33).

³⁵⁷ See Testimony of Hilary Gordon, Mayor of Huntington, Utah, UMSC Hearing, Nov. 13, 2007, at 159-72; Testimony of Joseph Piccolo, Mayor of Price, Utah, UMSC Hearing, Nov. 13, 2007, at 172-75.

³⁵⁸ Emery County Sheriff Lamar Guymon and Utah Public Safety Commissioner Scott Duncan briefed the UMSC on September 10, 2007 on the roles of local and state agencies in the Crandall Canyon emergency response efforts. The audio recording of their testimony can be heard at <http://minesafetycommission.utah.gov/meetings/UMSC%20Meeting%2009-102007/Conference.mp3> (last visited Dec. 19, 2008).

³⁵⁹ "It was one of the best run operations I've ever seen." Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 20. See Testimony of Wes Sorenson, General Manager, Skyline Mine, Arch Coal, UMSC Hearing, Dec. 11, 2007, at 86-87.

³⁶⁰ See Testimony of Governor Jon M. Huntsman, Jr., UMSC Hearing, Nov. 13, 2007, at 84-86.

³⁶¹ Testimony of John Baza, Director, Utah Division of Oil, Gas and Mining, UMSC Hearing, Nov. 13, 2007, at 135-43, 150.

response issues.”³⁶² He noted that Kentucky and West Virginia have trained officials who participate in rescue operations.³⁶³

The UMSC recommended that the state Office of Coal Mine Safety (OCMS) work with the Division of Homeland Security and other state agencies to develop a plan to guide state assistance in the rescue and recovery operations following an accident.³⁶⁴ It further recommended that the state OCMS work with coal operators, miner representatives, and federal, state, and local government agencies on mine emergency response coordination, including communications with and support of the victims’ families.³⁶⁵ One leading coal mine executive suggested that the state task its Division of Homeland Security to develop plans to coordinate federal, state, and local resources, and that companies could draw upon this work to supplement their emergency response plans.³⁶⁶

Alabama and Pennsylvania maintain stations for mine rescue teams.³⁶⁷ Canyon Fuel Company President Gene E. DiClaudio suggested that Utah do so at WETC, which could house mine rescue, fire fighting, and atmospheric monitoring equipment that could be deployed in a mine emergency.³⁶⁸ The UMSC made such a recommendation.³⁶⁹ He further proposed that the state periodically sponsor a mine emergency response drill. “It would provide a practical way to involve the State, MSHA, mine rescue teams, and local emergency responders in a constructive exercise.”³⁷⁰

Industry safety managers such as Kevin Tuttle, Chairman of the Rocky Mountain Coal Mine Rescue Association and Health and Safety Manager for Energy West Mining, agreed that the state and WETC may be a beneficial source of specialized rescue equipment not otherwise available to all of the mines.³⁷¹ Interwest Mining Safety Manager Ralph Sanich cautioned that provision would need to be made for personnel to maintain the equipment.³⁷² Some states in the

³⁶² Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 12.

³⁶³ *Id.* at 17-18.

³⁶⁴ UMSC Report, *supra* note 11, at 60 (Recommendation 34).

³⁶⁵ *Id.* at 61-63 (Recommendations 36, 37, 43, & 44). See Mike Gorrell, *Mayor of Price: We Must Plan Better*, S.L. TRIB., Oct 22, 2007, at A1.

³⁶⁶ Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 36-37.

³⁶⁷ *Id.* at 20.

³⁶⁸ See Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 35-36.

³⁶⁹ UMSC Report, *supra* note 11, at 61 (Recommendation 38).

³⁷⁰ See Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 35.

³⁷¹ See Testimony of Kevin Tuttle, Manager of Health and Safety, Energy West Mining Company, UMSC Hearing, Nov. 13, 2007, at 64. See also Testimony of Wes Sorenson, General Manager, Skyline Mine, Arch Coal, UMSC Hearing, Dec. 11, 2007, at 78-79.

³⁷² See Testimony of Ralph Sanich, Safety Manager, Interwest Mining Company, UMSC Hearing, Jan. 3, 2008, at 141.

East have state-sponsored rescue teams to supplement company teams, but Mr. Tuttle is “more of a proponent to have mines cover themselves.”³⁷³

Several witnesses told the UMSC that WETC could provide mine rescue training unique to Utah.³⁷⁴ For example, Interwest Mining executive Carl Pollastro suggested the benefit of having “highly specialized mine rescue or emergency preparedness teams . . . centered out of WETC,” where mine rescue team members could “be trained in some of the higher or sophisticated methods of mine rescue.”³⁷⁵ Brad Timothy, a long-time miner and mine rescue team member told the UMSC that “the training center for mine rescue would be great.”³⁷⁶ The UMSC supported mine rescue training at WETC.³⁷⁷

In fact, CEU provides mine rescue team training and has for many years hosted an annual mine rescue contest for teams from throughout the West.³⁷⁸ Local government officials expressed interest in receiving training for coal mine disaster emergency response to work effectively with MSHA and others.³⁷⁹ CEU is evaluating investment in a simulated underground mine rescue chamber for training at the WETC facility. The estimated cost is \$2.25 million.³⁸⁰ A recent GAO study on mine safety reported that “emergency training is best conducted in simulated conditions . . . because it builds miners’ confidence and enables them to respond appropriately during an actual emergency.” The study also found that over eighty percent of mines find the availability of simulated training to be a challenge.³⁸¹

The federalism benefits of innovative approaches to emergency response and of tailoring the response plan to particular circumstances are evident. Reliance on local agencies as first responders and a coordinated approach through collaborative planning should bring efficiency advantages. Involving the local community, where appropriate, in mine rescue and family support functions fosters community empowerment, and involving the different levels of government better ensures that gaps in response are covered through dynamic federalism.

The UMSC record shows strong support for all levels of government to support the operator in the emergency response effort. Witnesses did not challenge

³⁷³ Testimony of Kevin Tuttle, Manager of Health and Safety, Energy West Mining Company, UMSC Hearing, Nov. 13, 2007, at 104-05.

³⁷⁴ Testimony of Kevin Tuttle, Manager of Health and Safety, Energy West Mining Company, UMSC Hearing, Nov. 13, 2007, at 63-64.

³⁷⁵ Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 68.

³⁷⁶ Testimony of Brad Timothy, UMSC Hearing, Sept. 25, 2007, at 109.

³⁷⁷ UMSC Report, *supra* note 11, at 55, 61 (Recommendations 15 & 38).

³⁷⁸ See Testimony of Dale Evans, Chairman of the Mining Department, Division of Workforce Education, College of Eastern Utah, UMSC Hearing, Oct. 2, 2007, at 15-16; Testimony of Kevin Walthers, Vice President for Finance and Administration, College of Eastern Utah, UMSC Hearing, Nov. 20, 2007, at 167-68.

³⁷⁹ See Testimony of Steven D. Burge, Carbon County Commissioner, UMSC Hearing, Oct. 2, 2007, at 94-98.

³⁸⁰ See Testimony of Kevin Walthers, Vice President for Finance and Administration, College of Eastern Utah, UMSC Hearing, Nov. 20, 2007, at 166-67.

³⁸¹ GAO Mine Safety Report, *supra* note 315, at 12-17.

a federalism approach in this context, but they did stress the importance of planning and coordination, effective leadership at the rescue command center, and a clear chain of command to make it work. Meeting this challenge would bring the kind of interaction where the benefits of federalism find their maximum value.

F. Independent Mine Accident Investigation

One of the UMSC's recommendations called for a mine accident investigation system that operates independently of MSHA.³⁸² Current law tasks MSHA with conducting investigations after serious accidents. MSHA claims there are no better accident investigators than those in the agency and that the agency can staff the investigation team to minimize conflicts of interest.³⁸³ A top mining executive said that "MSHA does a credible job of conducting major accident investigations."³⁸⁴ Nonetheless, the Commission was concerned about actual or potential conflicts and the appearance of conflict, and it pointed to the investigation of aviation accidents by the National Transportation Safety Board rather than the Federal Aviation Administration as an example of how to avoid these problems.³⁸⁵

The Commission also noted that this recommendation should not be construed as criticism of the professionalism or competence of the MSHA investigation of the Crandall Canyon Mine disaster.³⁸⁶ However, the Crandall investigations pointed to the value of this proposal. The official MSHA investigation was conducted by the same agency that inspected the mine and approved the mining plan. The investigation team focused on the conduct of MSHA officials and the operator in the development and approval of the roof control plan for mining the South Barrier Pillar at Crandall. The MSHA investigation report pointed primarily at the operator and its engineering consultant for the faulty roof control plan.³⁸⁷ The outside Department of Labor investigation focused on the regulatory failures of MSHA.³⁸⁸

The UMSC stated that "[c]onducting the accident investigation outside the agency would assure families of the victims, their communities, and the public that the investigation is conducted in a thorough and impartial manner."³⁸⁹ Although not addressing this particular proposal, former Department of Interior Solicitor Eugene Scalia's identification of challenging issues arising from MSHA's four-times-per-year inspection responsibility³⁹⁰ illuminates the issue:

³⁸² UMSC Report, *supra* note 11, at 63 (Recommendation 45).

³⁸³ See Testimony of Kevin G. Stricklin, Administrator for Coal Mine Safety and Health, MSHA, UMSC Hearing, Nov. 20, 2007, at 47.

³⁸⁴ Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 38.

³⁸⁵ UMSC Report, *supra* note 11, at 63.

³⁸⁶ *Id.*

³⁸⁷ See *supra* notes 223-36 and accompanying text.

³⁸⁸ See *supra* notes 237-44 and accompanying text.

³⁸⁹ UMSC Report, *supra* note 11, at 63.

³⁹⁰ 30 U.S.C. § 813(a) (2006).

When a dangerous condition at a mine causes serious injury or death, MSHA will have been there recently. When it was there, what did it find? If it did not find the hazard, why not? If it did find the hazard, what did it do to address it and was that enough? For MSHA to identify a violation in a post-accident investigation, [it] is for the agency to raise the possibility that it erred.³⁹¹

Although the UMSC did not make a specific recommendation for state involvement in post-accident investigations, federalism considerations suggest some state involvement in an independent investigation would be worthwhile. Indeed, the current system calls for a state representative to be on the MSHA post-accident investigation team, and that was the case with the Crandall investigation. Broader state participation would involve a level of government closer to the community that suffered the consequences of the accident and build local accountability into the conduct of the investigation. State involvement would more likely bring perspective and understanding that respond to some of the unique Utah coal mining conditions surrounding the accident. To achieve the benefits of an independent investigation, the state participants would themselves need to be independent of state-level coal mine safety officials.

G. State Tort Law and Workers' Compensation

The UMSC did not address the role of judicial redress for victims of coal mine accidents, but the role of state compensation and tort law in coal mine safety regulation deserves mention in this discussion of the role of the state. Compensation and tort law are generally considered matters of traditional state concern.³⁹² Individual recourse provides an important means for citizens to seek damages for private wrongs and for the state to achieve public regulatory goals.³⁹³ Prominent tort scholars such as Justice Traynor, Fleming James, William Prosser, and Leon Green viewed tort law as a form of public regulation to achieve policy goals.³⁹⁴

Throughout the twentieth century, state courts and legislatures have expanded and modified common law tort doctrine to provide greater protection to consumers and employees.³⁹⁵ More recently, states, in the name of tort reform, have scaled

³⁹¹ Eugene Scalia, *Inspection and Enforcement Strategies at the U.S. Department of Labor*, 7 U. PA. J. LAB. & EMP. L. 529, 530 (2005).

³⁹² See *Bates v. Dow Agrosciences*, 544 U.S. 431, 449 (2005) (describing state tort law as an area of "traditional state regulation").

³⁹³ See Alexandra B. Klass, *Tort Experiments in the Laboratories of Democracy*, 50 WM. & MARY L. REV. (forthcoming 2009) (at 3 in paper download), available at <http://ssrn.com/abstract=1263929>.

³⁹⁴ See John C.P. Goldberg, *The Constitutional Status of Tort Law: Due Process and the Right to a Law for the Redress of Wrongs*, 115 YALE L.J. 524, 580-83 (2005).

³⁹⁵ See Klass, *supra* note 393 (at 7 in paper download).

back tort rights in areas such as medical malpractice and punitive damages, and expanded them in others such as consumer and environmental protection.³⁹⁶

In the area of coal mine safety, the primary state law system of redress from the employer for death or injury from an accident is the workers' compensation system. When states adopted workers' compensation laws in the early twentieth century—the Utah Workers' Compensation Act was enacted in 1917—coal miners and operators differed sharply on the details but generally and eventually welcomed the opportunity to avoid the uncertainty and expense of litigation. Miners in particular recognized the value of being assured of at least some compensation for injury or death on the job.³⁹⁷ The workers' compensation systems were seen initially as providing operators an incentive to improve mine safety and secure reduced insurance premiums with low or improved accident rates.³⁹⁸

Workers' compensation law varies from state to state. The central feature is the employee's right to recover compensation from the employer for death or injury as the "exclusive remedy" in place of all other civil liability.³⁹⁹ Most states recognize an exception to the exclusivity of the workers' compensation remedy for intentional injury by the employer. In Utah, "[w]illful and intentional tort acts of employers . . . are outside the Act."⁴⁰⁰ An adjustment to workers' compensation law could offer an additional incentive for coal operators to comply with safety regulations.⁴⁰¹ For example, if the state required independent review of the mining plan, failure to comply could be made to have compensation liability consequences.

If an injured worker or the family of a deceased worker can show a material failure to comply with a safety requirement, the operator could be liable for an additional compensation amount or be subject to a negligence suit in state court. In Ohio, for example, the state constitution authorizes the Industrial Commission to provide additional awards for employer violations of specific safety requirements.⁴⁰² The award is extra compensation for the claimant and a penalty for the employer.⁴⁰³ Civil penalties are imposed for multiple violations.⁴⁰⁴ In California, compensation is increased by half for serious and willful conduct of the employer, which includes violation of a safety order.⁴⁰⁵ In Utah, this approach

³⁹⁶ See *id.* at 7-25.

³⁹⁷ See WHITESIDE, *supra* note 2, at 127.

³⁹⁸ See *id.* at 128.

³⁹⁹ See UTAH CODE ANN. § 34A-2-105 (Supp. 2008).

⁴⁰⁰ *Stokes v. Flanders*, 970 P.2d 1260, 1262 n.3 (Utah 1998). See *Helf v. Chevron U.S.A., Inc.*, 2009 UT 11 (explaining the intentional injury exception).

⁴⁰¹ For a critical analysis of incentive-based MSHA regulation, see Andrew Morgan, Note, *New Changes to 30 C.F.R. 100.3(c): Weaknesses and Suggested Improvements in the Assessment of a Mine Operator's History of Violations*, 28 J. LAND RESOURCES & ENVTL. L. 415 (2008).

⁴⁰² OHIO CONST. art. II, § 35. This authority is codified at OHIO REV. CODE ANN. § 4121.131 (2007).

⁴⁰³ See *State ex rel. Kroger Co. v. Indus. Comm.*, 402 N.E.2d 528 (Ohio Ct. App. 1980).

⁴⁰⁴ OHIO REV. CODE ANN. § 4121.47 (2007).

⁴⁰⁵ CAL. LAB. CODE § 4553 (2003).

could involve expansion of the current statute that increases compensation by fifteen percent for an employer's willful violation of "the law."⁴⁰⁶

To avoid concerns about agency capture at the state level, a court should have authority to determine the issue of noncompliance on a *de novo* basis—no deference would be accorded to an agency determination on this issue. A further possibility might be to supplement the workers' compensation funding with a coal miners' safety fund supported with a modest tax on coal production that would be reduced for operators with a strong safety record. Numerous variations in this approach could be identified. The point is that reform of workers' compensation law and its relationship with state tort recovery could be used to create greater safety incentives for industry. The state may also wish to consider legislation on coal mine safety that imposes state civil and criminal penalties for willful violation of state or federal safety standards.

This approach is a clear example of state experimentation in a federal system designed to meet the diverse needs of the state. It may achieve greater industry accountability for accidents caused by failure to meet safety standards, and it fits the notion of federalism as empowerment by reinforcing federal safety efforts with an additional state check on safety failure. For industry, however, it cuts against the benefits of having uniform and clear liability standards that otherwise exist under the MSHA regulatory model and the relatively common standards in the various states' workers' compensation and tort systems.

An interesting federalism dynamic operates between state tort law and the potential for federal government liability for the negligence of MSHA mine inspectors under the Federal Tort Claims Act.⁴⁰⁷ Such liability is possible when the negligent conduct would constitute tort liability if it had been committed by a private citizen in the state where the conduct occurred.⁴⁰⁸ Even then, an action is barred when the conduct is considered a "discretionary function."⁴⁰⁹

The federal circuits are split over whether the "discretionary function" exception bars a tort action against the federal government for a federal mine inspector's negligent inspection that caused a miner's injury or death.⁴¹⁰ The Tenth Circuit has held that the discretionary function exception did not bar liability for an MSHA inspector's faulty technical advice that did not follow the criteria in MSHA regulations.⁴¹¹ Because workers' compensation laws typically bar miners from

⁴⁰⁶ UTAH CODE ANN. § 34A-2-301(2) (a) (2005).

⁴⁰⁷ 28 U.S.C. § 2672 (2006).

⁴⁰⁸ *Id.* § 1346(b)(1).

⁴⁰⁹ *Id.* § 2680(a). See Shari Ben Moussa, *Mining for Morality at Sago Mine: Big Business and Big Money Equal Modest Enforcement of Health and Safety Standards*, 18 U. FLA. J.L. PUB. POL'Y 209, 240-41 (2007).

⁴¹⁰ Compare *Estate of Bernaldes v. United States*, 81 F.3d 428 (4th Cir. 1996) (discretionary function exception bars claim), with *Myers v. United States*, 17 F.3d 890 (6th Cir. 1994) (discretionary function exception not applicable to negligence of mine inspectors).

⁴¹¹ See *Ayala v. United States*, 980 F.2d 1342, 1349-50 (10th Cir. 1992).

suing their employers for negligence,⁴¹² this alternative path to recovery against the federal government could be significant. And if it is tied to substantive state tort law, this path opens up another avenue of state experimentation.

VII. CONCLUSION

The statistics show a significant reduction of coal mine fatalities during the twentieth century in every major coal mining country.⁴¹³ In the United States, the period 1911 to 1920 experienced 2,468 coal mine fatalities per year, and the average number of coal miners employed per year was 749,775. From 1991 to 2000, there were fifty-one fatalities per year, and the average number of coal miners was 132,629.⁴¹⁴ Coal mining fatalities were one-sixtieth of what they were at the beginning of the century, and coal production was five times as great.⁴¹⁵ From 2001 to 2007, the fatalities per year averaged thirty-three, and coal miner employment averaged 114,476.⁴¹⁶

These trends were due largely to changes in the industry leading to safer working conditions. Continued progress in reducing the fatal incident rate has been attributed to many factors, including (1) mine safety legislation and enforcement; (2) technological developments and the transition to the mechanization of coal mines,⁴¹⁷ such as longwall mining in underground mines;⁴¹⁸ (3) and the complex efforts by and interrelationships among the mine operators, organized labor, research institutions, and government enforcement agencies.⁴¹⁹ One commentator pointed to a growing commitment to safety of the United Mine Workers of America and the leading coal companies.⁴²⁰

It is beyond this project's purpose to sort out those interrelationships and rank the various factors, but an effective mine safety regulatory program is critical. One empirical study of twentieth century coal mine safety and analysis of thirty-nine mine accident disasters concluded that most of the disasters would not have happened if the law had been followed and that regulatory enforcement was a major factor in producing significant coal mine safety improvements.⁴²¹

⁴¹² See Jay Lapat & James P. Notter, *Inspecting the Mine Inspector: Why the Discretionary Function Exception Does not Bar Government Liability for Negligent Mine Inspections*, 23 HOFSTRA LAB. & EMP. L. J. 413, 434, 438 (2006).

⁴¹³ See BRAITHWAITE, *supra* note 267, at 1.

⁴¹⁴ Grayson & Watzman, *supra* note 78, at 6; MSHA, *Coal Fatalities*, *supra* note 56.

⁴¹⁵ See R.V. Ramani & J.M. Mutmansky, *Mine Health and Safety at the Turn of the Millennium*, 51 MINING ENGINEERING 9, 25-30 (1999).

⁴¹⁶ MSHA, *Coal Fatalities*, *supra* note 56.

⁴¹⁷ See BRAITHWAITE, *supra* note 267, at 5.

⁴¹⁸ See BARLOW BURKE, JR., ROBERT E. BECK, CYRIL A. FOX, JR., *MINERAL LAW CASES AND MATERIALS* 316-17 (1994); Testimony of Michael G. Nelson, Chief Technical Officer, Palladon Ventures, Associate Professor of Mining Engineering, University of Utah, UMSC Hearing, Oct. 22, 2007, at 103-10.

⁴¹⁹ See Grayson & Watzman, *supra* note 78, at 6-9; WHITESIDE, *supra* note 2, at xiv, 209.

⁴²⁰ See BRAITHWAITE, *supra* note 267, at 7-12.

⁴²¹ See generally BRAITHWAITE, *supra* note 267.

It is important to acknowledge the significant safety roles of all participants and the progress in reducing the number and rate of fatalities and injuries in the nation's coal mines. But, as we were painfully reminded recently through the tragedies at Sago and Aracoma, West Virginia and at Crandall Canyon, Utah, coal mine disasters continue to happen. And, as the UMSC was told, continued underground mining in Utah is going to present more dangerous challenges.

Everyone who is responsible for safety in coal mining supports continued safety improvement in this high-risk activity. All must strive to prevent death and injury from occurring. Consol Energy CEO Brett Harvey, who appeared before the UMSC, called for a commitment to zero accidents in coal mining.⁴²² All share this goal.⁴²³ Finding consensus on how to achieve it is a challenge.

This article has attempted to suggest how states like Utah, with minimal participation in coal mine safety since adoption of the Federal Mine Safety Act in 1977, can act to further the goal of zero accidents. It has shown the potential for effective and dynamic federal-state collaboration on a variety of safety policies. The State of Utah should consider the opportunities it could pursue to redeem the goal often heard in coal country of seeing every miner return home safely at the end of every shift.

⁴²² Testimony of J. Brett Harvey, President and Chief Executive Officer, CONSOL Energy, Inc., UMSC Hearing, Jan. 3, 2008, at 9, 16-19; *see also* J. Brett Harvey, President and Chief Executive Officer, CONSOL Energy, Inc., Keynote Address at the Utah Mining Association 92nd Meeting (Aug. 23, 2007) (on file with author).

⁴²³ "Our company, and our industry, should never be satisfied until we reach our goal of zero injuries." Testimony of Gene E. DiClaudio, President, Canyon Fuel Co., UMSC Hearing, Jan. 3, 2008, at 21. "Our goal is an injury-free environmental[ly] responsible workplace. Our belief is all injuries and harm to the environment are preventable." Testimony of Ray Bridge, Safety Manager, Dugout Canyon Mine, Arch Coal, UMSC Hearing, Sept. 25, 2007, at 15. "[S]afety is the top value that we have." Testimony of Carl Pollastro, Director of Technical Services Project Development, Interwest Mining Co., UMSC Hearing, Sept. 25, 2007, at 57. "[M]ine safety has always been and will continue to be a paramount core value." Testimony of Neil L. Getzelman, President, Interwest Mining Co., UMSC Hearing, Jan. 3, 2008, at 43.