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Regulation of Silica: Will Lowering the Exposure Level Cost Jobs or Improve Public Health?

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REGULATION OF SILICA: WILL LOWERING THE EXPOSURE LEVEL COST JOBS OR IMPROVE PUBLIC HEALTH?

Elizabeth Ann Glass Geltman*

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I. INTRODUCTION

Public understanding of the dangers of silica dust began in West Virginia in Gauley Bridge when Union Carbide and the New Kanawha Power Company embarked on construction of the Hawks Nest Tunnel from 1930 to 1934 in order to bring power to Appalachia.1 In 1935, both the West Virginia Legislature and the federal government began investigating ways to protect workers and neighboring communities from exposure to silica dust because of an understanding that silica exposure could lead to silicosis, lung cancer, chronic obstructive pulmonary disease, kidney disease and other associated health ailments.2 West Virginia responded to the Hawks Nest tragedy by amending

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2 See CHERNIACK, supra note 1, at 69–71.
workers’ compensation laws to allow compensation for silicosis.\(^3\) By 1938, 46 states followed West Virginia’s example.\(^4\)

While almost all states now allow workers’ compensation for actual job-related damages to health, initiatives persist to prevent silicosis rather than just provide compensation to those who contract the disease from work related exposure.

Efforts to enhance federal silica protection for workers began in 1938 with testimony from Frances Perkins.\(^5\) Despite an early understanding of the danger of silica exposure, federal regulation of silicosis did not exist at all until 1971 when the newly created U.S. Department of Labor, Occupational Safety and Health Administration (“OSHA”) established standards that most agreed were inadequate to protect workers from health damage.\(^6\) In 2016, OSHA revised the Silica Rule—45 years after the first proposal for revisions to the standard.\(^7\) Industry immediately filed a lawsuit challenging the legality of the new OSHA Silica Rule.\(^8\) Unions also filed a lawsuit alleging the Silica Rule did not go far enough to protect worker health.\(^9\)

Notwithstanding the change in administration, on September 20, 2017, OSHA announced it would begin enforcement and compliance assistance of the new silica construction standard beginning September 23, 2017.\(^10\) The OSHA silica requirements for General Industry/Maritime would commence the

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7. *Id.*


following year on June 23, 2018. The D.C. Circuit heard oral arguments on the rule on September 26, 2017, and decided the challenges to the silica standard just before Christmas on December 22, 2017.

The OSHA regulations, generally, and the new silica standard, specifically, remain controversial due to public concern that OSHA worker protections do more to kill jobs than they do to protect workers—especially in Appalachia. Residents of Appalachia debate the balance between need for jobs and need for regulations to reduce silica exposure and protect health on the job.

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While it is not uncommon for common jobs like construction to lead to exposure to silica dust, certain industries (like sand mining, mountain top coal mining, and shale oil and gas extraction) that are well-paid and particular to Appalachia have extremely high silica exposure levels because of the geological formations in the region. West Virginia and other parts of Appalachia continue to have among the highest rates of silicosis in the United States. 

This Article explores the recent OSHA silica regulations. The Article begins with a history of silicosis in the United States, a description of the health impacts and the federal regulatory response outlined in 29 C.F.R. § 1926.1153. Next the Article examines arguments of labor unions favoring the rule and of industry in Appalachia (including the West Virginia Manufacturers Association) opposing implementation of the new regulations. The Article discusses efforts by the American Legislative Exchange Council ("ALEC") to enact state by state limits on silica claims using model legislation entitled the "Asbestos and Silica Claims Priority Act," including recent legislation in West Virginia using the same name. Finally, the Article examines legal challenges to the Silica Rule brought by both unions and industry and how the decision of the D.C. Circuit regarding the Silica Rule may impact good health and economic prosperity.


20 For the docket created by OSHA with materials relating to the Silica Rule, see Occupational Exposure to Crystalline Silica: Docket Summary, REGULATIONS.GOV, https://www.regulations.gov/docket?D=OSHA-2010-0034 (last visited Mar. 28, 2018) [hereinafter Docket Summary].


22 W. VA. CODE ANN. § 55-7G-1 (West 2018).
II. SILICA & SILICOSIS IN THE UNITED STATES AND AROUND THE WORLD

In 1930, Union Carbide and the New Kanawha Power Company embarked on construction of the Hawks Nest Tunnel in Summersville, West Virginia, in order to bring power to Appalachia. The construction of the three-mile tunnel through Gauley Mountain between Ansted and Gauley Bridge, West Virginia, took four years. The plan was to use water from the New River to be diverted through the constructed tunnel to a hydroelectric plant downstream. The new power plant would provide electricity for Union Carbide’s metals plant at Alloy, West Virginia.

Hundreds of unemployed men (about two-thirds of whom were African American) were recruited to dig the 32- to 36-inch tunnel through solid rock containing high levels of silica. The dry drilling technique used at the time released vast amounts of silica dust into the enclosed space, impairing vision in the tunnel. Few, if any, safety measures were put in place to protect construction workers, who labored with poor ventilation, a lack of dust control, and limited use of personal breathing protection. Diggers routinely emerged with layers of white silica dust on clothes and dust in their lungs. It took only months for Hawks Nest Tunnel workers to become sick with silicosis, an incurable disease caused from breathing silica dust, then called “tunnelitis.”

25 The Hawk’s Next Tunnel Disaster, supra note 23.
26 Id.
27 Id.
28 Id.
29 Id.
30 Id.
Figure 1: Construction on the Hawks Nest Tunnel.\textsuperscript{31}

Men working in the Hawks Nest Tunnel rarely lasted more than a year before becoming so sick they could no longer work.\textsuperscript{32} 764 workers died of silicosis during construction of the tunnel, most of whom were previously unemployed African Americans.\textsuperscript{33} More died following completion of the project, which continues diverting water from the New River to produce hydro-electricity for the Alloy plant.\textsuperscript{34} The total death toll remains uncertain.\textsuperscript{35}

Two trials were held in 1933 and 1934 in Fayetteville and in Charleston to litigate silicosis claims from tunnel construction workers.\textsuperscript{36} The trials consolidated about 538 lawsuits and resulted in a modest out-of-court settlement of about $200,000 to all claimants.\textsuperscript{37} Individual silicosis awards for damages sustained in the Hawks Nest Tunnel ranged from $30 to $1,600.\textsuperscript{38}

\textsuperscript{31} Id.
\textsuperscript{32} Id.
\textsuperscript{33} Id.
\textsuperscript{34} Id.
\textsuperscript{35} Cherniack, supra note 24.
\textsuperscript{36} Id.
\textsuperscript{37} Id.
\textsuperscript{38} Id.
In 1936, the U.S. House of Representatives held hearings on occupational injuries sustained in construction of the Hawks Nest Tunnel and attributed 476 deaths to work on the tunnel.39 More recent studies estimate the death toll from acute silicosis and related conditions to about 764 men.40 Silicosis was designated as an occupational disease with compensation for workers following the Congressional hearings.41 "In 1937, Secretary of Labor Frances Perkins declared war on silicosis, toured mines, [and] convened national conferences on the problem...."42 In 1938, Secretary Perkins created a film entitled "Stop Silicosis," warning of the dangers of silica exposure and explaining workplace procedures to avoid the disease.43 Although the Hawks Nest Tunnel continues to be classified as among the greatest occupational tragedies, the project is also considered an enormous engineering success providing power to the Alloy plant.44 The tension between the human toll to workers and commercial success for industry identified at the Hawks Nest Tunnel continues to be debated today in Appalachia and around the world.45

III. THE DEVELOPMENT OF OSHA SILICA REGULATIONS

Congress enacted the Occupational Safety and Health Act ("OSH Act") in 1970 with directions that the Secretary of Labor create occupational safety or

39 See id.
40 Id. The National Park Service also reports the death toll at 764 workers. The Hawk's Nest Tunnel Disaster, supra note 23.
44 Cherniack, supra note 24; Crandall & Crandall, supra note 41, at 272.
health standards\textsuperscript{46} that are "reasonably necessary or appropriate to provide safe or healthful employment and places of employment."\textsuperscript{47} The Secretary of Labor created the Occupational Safety and Health Administration ("OSHA") and delegated regulatory authority for worker safety to OSHA.\textsuperscript{48}

OSHA promulgated a silica standard in 1971,\textsuperscript{49} establishing a permissible exposure limit ("PEL")—a time-weighted average of a worker's exposure during a workday—of 100 micrograms per cubic meter ($\mu g/m^3$) for workers in general industry and 250 $\mu g/m^3$ for workers in the construction industry.\textsuperscript{50} OSHA began evaluating the efficacy of the 1971 rule regarding silica-related health effects in the workplace in the 1990s and determined that a new Silica Rule was needed based on modern understanding of the adverse health impacts of silica on workers.\textsuperscript{51}

Secretary of Labor Robert B. Reich launched a new national education campaign to reduce silicosis in 1996.\textsuperscript{52} Reich explained, "We are continuing to make significant progress fighting this disease . . . [T]here is no reason at all for any workers to suffer from silicosis. When we get the word out to all worker[s] and employer[s] on how to control silica dust, lives will be saved."\textsuperscript{53} Reich's campaign was designed to "to finish the job of eliminating silicosis that Secretary Perkins had started 60 years earlier."\textsuperscript{54}

Despite activity in the 1990s, it was not until September 12, 2013, that OSHA proposed a new Silica Rule and established docket OSHA-2010-0034-1721 for public notice and comment.\textsuperscript{55} OSHA proposed the new Silica Rule after extensive scientific investigation and review because the agency determined that strong evidence showed that the 1971 PELs did not adequately protect worker

\textsuperscript{46} Occupational Safety and Health Act § 6(b), 29 U.S.C. § 655(b) (1970).

\textsuperscript{47} Id. § 652(8).


\textsuperscript{51} See id. at 16295.

\textsuperscript{52} The Campaign to End Silicosis, supra note 42.

\textsuperscript{53} Id.

\textsuperscript{54} Id.

health. The 1971 PELs were based on research from the 1960s and earlier and did not reflect recent scientific evidence. Since 1971, the U.S. National Toxicology Program, the International Agency for Research on Cancer, and the National Institute for Occupational Safety and Health all identified respirable crystalline silica as a human carcinogen.

The agency received a reported 2,068 public comments on the proposed Silica Rule, of which 1,786 were posted by the agency. The OSHA docket was reviewed using established principles of legal epidemiology. Comments in the


57 Proposed Crystalline Silica Rule, supra note 56.


59 Docket Summary, supra note 20.

docket were collected and indexed using the docket identification number assigned by the agency on Regulations.gov in a sortable spreadsheet. A sample set was reviewed so coders could develop a consistent approach. Two coders divided all comments and coded half the materials; the coders then switched and reviewed each other’s findings using an excel spreadsheet to coordinate results. A fresh coder and a supervisor were assigned to ensure consistency by randomly spot checking using an interval of 10% and then reviewing the result, respectively. Coders used Computer Assisted/Aided Qualitative Data Analysis Software (CAQDAS) to verify consistency using autocoding of key words and synonyms. Once complete, the results of the OSHA Silica docket were analyzed using descriptive statistics to determine patterns and themes. The table below depicts the source and number of comments submitted to OSHA regarding the proposed Silica Rule:

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OSHA held numerous hearings on the proposed Silica Rule and invited testimony by experts to be presented both orally and online in the docket. The


table below indicates the relative number of comments sent pursuant to mass mailing campaigns as well as how the comments were submitted to OSHA:

**Figure 3: Source of Comments – Analysis.**

<table>
<thead>
<tr>
<th>Source of Comments</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>992</td>
</tr>
<tr>
<td>Custom Comments</td>
<td>641</td>
</tr>
<tr>
<td>Notice of Intent to Appear (N/D/T/A/Advance Testimony)</td>
<td>104</td>
</tr>
<tr>
<td>E-mail</td>
<td>14</td>
</tr>
<tr>
<td>Letter</td>
<td>55</td>
</tr>
<tr>
<td>Transcript</td>
<td>14</td>
</tr>
<tr>
<td>Hearing Exhibits</td>
<td>168</td>
</tr>
<tr>
<td>Hearing Testimony</td>
<td>7</td>
</tr>
</tbody>
</table>

In its regulatory impact analysis required pursuant to administrative law, OSHA estimated that the proposed Silica Rule would result in about $2.8 to $4.7 billion in benefits over the next 60 years. These benefits derive from preventing worker disability and avoiding medical costs resulting from silica exposure on the job. In contrast, OSHA estimated that the proposed silica standards would

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64 See Occupational Exposure, supra note 62.


66 Mirer, supra note 65, at 23.
cost industry an estimated annual amount of about $637 million.\(^{67}\) Added costs were primarily due to addition of ventilation equipment, need for extra workers to conduct air monitoring, and medical surveillance.\(^{68}\) Finally, OSHA estimated potential job impact—a significant step, as it was the first time OSHA included job impact in a regulatory impact analysis.\(^{69}\) OSHA estimated the new Silica Rule would create about 8,000 jobs in the first year.\(^{70}\) As one union representative explained,

Anyone with experience in the world of work knows that compliance with a standard immediately creates jobs: someone has to be hired to vacuum up dust, or construct and maintain a ventilation system. These benefits are immediate, concentrated, and enjoyed by manual and technical workers. The speculative loss of jobs due to raised product prices (always a modest amount) is diffuse, and, if it exists, will be experienced by stockbrokers and bankers as well as workers.\(^{71}\)

OSHA estimated annual costs of about $1,242 for the average workplace covered by the rule.\(^{72}\) The annual cost to a firm with fewer than 20 employees was, however, expected to be significantly less at about $550 per year.\(^{73}\) Moreover, while being relatively inexpensive for industry and having huge public health savings, OSHA determined the proposed rule would have no discernible impact on total U.S. employment.\(^{74}\)

OSHA promulgated the final Silica Rule on March 25, 2016.\(^{75}\) The new rule lowered the PEL to 50 μg/m\(^3\),\(^{76}\) and required employers to assess workplace

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\(^{67}\) Id.

\(^{68}\) Id.

\(^{69}\) Id.

\(^{70}\) Id.

\(^{71}\) Id.

\(^{72}\) Id.

\(^{73}\) Id.

\(^{74}\) Id.


silica exposure levels.\textsuperscript{77} About 300 people die a year from silicosis.\textsuperscript{78} OSHA determined silicosis is “a 100% preventable disease.”\textsuperscript{79} OSHA estimated that the new Silica Rule will prevent 642 deaths and 918 cases of silica-related disease each year.\textsuperscript{80}

Under the new Silica Rule, worker exposure was limited to a PEL of 50 micrograms of respirable crystalline silica per cubic meter of air (\(\mu g/m^3\)), averaged over an eight-hour day for all industries covered by the rule.\textsuperscript{81} To ensure the PEL, the Silica Rule established provisions similar to industry consensus standards used for years by responsible employers.\textsuperscript{82} The Silica Rule requires:

\begin{itemize}

\textsuperscript{77} \textit{Id.}


\textsuperscript{79} \textit{Id.}

\textsuperscript{80} 81 Fed. Reg. 16,399; see also N. Am.’s Bldg. Trades Unions v. OSHA, 878 F.3d 271, 283 (D.C. Cir. 2017).

\textsuperscript{81} \textit{Proposed Crystalline Silica Rule}, supra note 56.

measuring how much silica workers are exposed to,
limiting workers’ access to areas where silica exposures are high,
using effective methods for reducing exposures,
providing medical exams to workers with high silica exposures, and
training for workers about silica-related hazards and how to limit exposure.83

In the rulemaking, OSHA identified specific job categories for general industry and construction that involve silica exposure and developed profiles showing current silica exposure levels for each.84 OSHA then identified the specific individual jobs for which additional silica controls would likely be required to comply with the new PEL85 and identified available controls for each that would likely reduce exposure below the new PEL.86 OSHA found that the new PEL was technologically feasible for 87 out of 90 job categories considered in general industry.87 In most cases, lowering silica exposure could be accomplished by using common dust control methods, such as wetting down work operations to keep silica-containing dust from getting into the air, enclosing


83 Proposed Crystalline Silica Rule, supra note 56.
84 OSHA, 878 F.3d at 291.
85 Id.
86 Id. (citing 81 Fed. Reg. at 16,433-34).
an operation ("process isolation"), or using a vacuum to collect dust at the point
where it is created before workers can inhale silica.\textsuperscript{88}

Employers working in the following industries or with employees who
work with the following products were presumptively subject to the Silica Rule:
construction; glass products; pottery products; structural clay products; concrete
products; foundries; dental laboratories; paintings and coatings; jewelry
production; refractory products; refractory installation and repair; ready-mix
concrete; cut stone and stone products; railroad track maintenance; hydraulic
fracturing for gas and oil; and abrasive blasting.\textsuperscript{89} Agricultural operations and
exposures from sorptive clays were exempt from the Silica Rule.\textsuperscript{90} Employees
exposed to only miniscule amounts of silica, defined as less than 25 micrograms
per cubic meter (25 \(\mu g/m^3\)) of air as an eight-hour time-weighted average, were
also exempt from the Silica Rule.\textsuperscript{91}

Under the Silica Rule, employers must implement engineering and work
practice controls to keep workplace exposures of silica below the PEL.\textsuperscript{92}
Engineering controls, such as dust management and dust collection devices,\textsuperscript{93} are
preferred over workplace practices. If it is not possible to reduce exposure below
the PEL using engineering and work practice controls, the employer must use
controls to the extent feasible and provide supplementary respirator
protections.\textsuperscript{94}

The Silica Rule also established housekeeping and medical surveillance
requirements. Housekeeping provisions prohibit employers from cleaning
worksites using dry sweeping methods if doing so could contribute to employee
silica exposure unless the employer can show wet cleaning methods are
infeasible.\textsuperscript{95} Medical surveillance provisions required employers to provide

\textsuperscript{88} Proposed Crystalline Silica Rule, supra note 56.
\textsuperscript{89} See Ogletree Deakins, A Beginner's Guide to OSHA's Final Silica Rule, LEXOLOGY (Apr.
\textsuperscript{90} Id.
\textsuperscript{91} Id.
\textsuperscript{93} For examples of devices designed to collect or manage silica dust, see MAKITA, OSHA
COMPLIANT PRODUCTS TO OSHA CRYSSTALLINE SILICA RULE 29 CFR 1926.1153, at 4–16 (2017),
\textsuperscript{95} Id. §§ 1910.1053(h)(1), 1926.1153(f)(1); see also OSHA Fact Sheet, OSHA's Crystalline
medical screening to silica-exposed workers under certain conditions.\textsuperscript{96} Most medical data collected, including the medical professionals' recommendations limiting the employee's exposure to silica, are deemed confidential under the rule and may not be released to the employer unless authorized by the employee.\textsuperscript{97} The Rule, however, provided no medical removal protections to workers whose doctors recommend either permanent or temporary removal from silica exposure on the job.

The Silica Rule was to be phased in and set different compliance dates for different industries as follows:

- June 23, 2017, for the construction industry;\textsuperscript{98}
- June 23, 2018, for the foundry industry;\textsuperscript{99}
- and June 23, 2021, for the hydraulic fracturing industry.\textsuperscript{100}

Both industry and unions immediately filed a lawsuit challenging the legality of the new OSHA Silica Rule.\textsuperscript{101} Industry challenged OSHA's "significant risk" finding regarding silica and the risk-assessment methodology OSHA used to make that determination.\textsuperscript{102} Unions alleged the Silica Rule was not protective enough.\textsuperscript{103}

On April 6, 2017, OSHA announced it would delay enforcement of the Silica Rule on the construction industry until September 23, 2017.\textsuperscript{104} Certain states with delegated OSHA programs\textsuperscript{105} did not, however, delay enforcement.\textsuperscript{106}

\begin{thebibliography}{26}
\item \textsuperscript{96} 29 C.F.R. §§ 1910.1053(i)(6), 1926.1153(h)(6) (2018).
\item \textsuperscript{97} Id. §§ 1910.1053(i)(6), 1926.1153(h)(6).
\item \textsuperscript{98} Id. § 1926.1153(k).
\item \textsuperscript{99} Id. § 1910.1053(l).
\item \textsuperscript{100} Id.
\item \textsuperscript{101} N. Am.'s Bldg. Trade Unions v. OSHA, 878 F.3d 271, 280 (D.C. Cir. 2017).
\item \textsuperscript{102} Id.
\item \textsuperscript{103} Id. at 280–81.
\item \textsuperscript{105} Twenty-six states, Puerto Rico, and the Virgin Islands currently have OSHA-approved "State Plans," Frequently Asked Questions, OCCUPATIONAL SAFETY & HEALTH ADMIN., https://www.osha.gov/dcsp/osp/index.html (last visited Mar. 28, 2018). Twenty-two State Plans include both private and state and local government workers. Id. Six State Plans cover only state and local government workplaces. \textit{Id.}
\end{thebibliography}
For example, the Virginia Occupational Safety and Health (VOSH) Program did not delay enforcement of the Construction Standard for Crystalline Silica, 1926.1153. Rather, Virginia determined that "[a]ll obligations under the VOSH standard are set to commence on June 23, 2017 except for requirements for sample analysis in paragraph (d)(2)(v), which commence on June 23, 2018."  

IV. COURT REVIEW OF CHALLENGES TO THE OSHA SILICA REGULATIONS  

The Chamber of Commerce and other industry groups opposed the new OSHA silica PEL of 50 micrograms per cubic meter, averaged over an eight-hour shift. Industry challenged OSHA’s risk-assessment methodology, and OSHA’s findings concerning identified individual health risks. Industry also challenged the inclusion of the brick industry within the rule and argued the Silica Rule wasn’t technologically feasible for foundries, hydraulic fracturing, and construction.  

In North America’s Building Trades Unions v. OSHA, the D.C. Circuit upheld the OSHA Silica Rule. The D.C. Circuit rejected all industry claims. The court noted that when promulgating the new Silica Rule, OSHA conducted a Quantitative Risk Assessment where the agency reviewed toxicological, epidemiological, and experimental studies about the adverse health effects resulting from workplace exposure to silica. The scientific facts were clear. Assuming a working life of 45 years, the quantified relative risk of silica-related health effects from exposure would be significantly reduced by lowering the 1971 general industry PEL of 100 μg/m\(^3\) and the 1971 construction PEL of 250 μg/m to the proposed silica PEL of 50 μg/m\(^3\). Based on the current Risk Assessment, OSHA categorically determined that reducing workplace silica exposure would significantly decrease the risk of numerous work-place ailments,  

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107 Id.  
108 Id.  
110 OSHA, 878 F.3d at 289.  
112 OSHA, 878 F.3d at 280.  
113 Id. at 283.  
114 Id.
Regulation of Silica including: silicosis and other non-malignant respiratory disease (NMRD) mortality, lung cancer mortality, silicosis morbidity, and renal disease mortality. The court found justification in the OSHA finding that reducing exposure to 50 μg/m³—the new silica PEL—would lower all four identified health risks. In total, OSHA estimated that the new PEL would prevent 642 deaths and 918 cases of silica-related disease each year. OSHA decided to change the PEL only after examining significant evidence and testimony over several years. The OSHA record clearly provided legal and scientific justification for modifying the acceptable workplace exposure to silica.

The court upheld OSHA’s risk-assessment methodology, explaining that “OSHA’s conclusions on handling the purported dose-rate effect are reasonable.” Further, the court said, “[C]ourts cannot interfere with reasonable interpretations of equivocal evidence,” and therefore we do not interfere here. With regard to OSHA’s findings of adverse health risks, the court concluded “OSHA’s significant risk findings as to the first three adverse health effects are supported by substantial evidence, which supports OSHA’s overall finding of a significant risk.” As such, the D.C. Circuit held that it did not need to evaluate OSHA’s finding with respect to renal disease mortality. The court similarly upheld OSHA’s decision to include the brick industry in the Silica Rule as it too was “supported by substantial evidence and a reasonable explanation.”

Finally, the court rejected industry concerns that sufficient controls did not yet exist to make the Silica Rule feasible. The court explained that OSHA “is not bound to the technological status quo” when considering what is and what is not technologically feasible. Since the OSH Act has long been held to be a “technology-forcing” statute, OSHA can “force industry to develop and diffuse

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115 Id.
116 Id.
117 Id.
119 OSHA, 878 F.3d at 285.
120 Id. (quoting Pub. Citizens Health Research Grp. v. Tyson (Ethylene Oxide), 796 F.2d 1479, 1505 (D.C. Cir. 1986)) (alteration in original).
121 Id.
122 Id.
123 Id. at 290.
124 Id. at 291.
125 Id. at 293 (quoting United Steelworkers of Am. v. Marshall (Lead I), 647 F.2d 1189, 1264 (D.C. Cir. 1980)).
new technology” to meet a new PEL. The only limit on technology forcing is the requirement that OSHA “gives industry a reasonable time to develop new technology” and “presents substantial evidence that companies acting vigorously and in good faith can develop the technology.” Where OSHA can demonstrate adequate time and a reasonable basis for ability to comply, OSHA can “require industry to meet PELs never attained anywhere.”

In the case of the Silica Rule, OSHA identified controls both under development and widely implemented by general industry and construction companies that are likely to reduce silica exposure. OSHA also gave industry appropriate amounts of time to implement those protections. OSHA gave the construction industry a year to come into compliance since controls for construction are well-established and readily available. OSHA gave Foundries two years to come into compliance based on increased difficulty and expense in implementing changes. OSHA gave the oil and gas industry five years to come into compliance with the new standard because the hydraulic fracturing industry had the least experience in silica control measures. The D.C. Circuit, thus, rejected industry arguments about the technological infeasibility of the Silica Rule. The court similarly rejected industry challenges as to the economic

126 Id. (citing Am. Iron & Steel Inst. v. OSHA (Lead II), 939 F.2d 975, 980 (D.C. Cir. 1991) (quoting Lead I, 647 F.2d at 1264)).
127 Id. (quoting Lead I, 647 F.2d at 1264–65).
128 Id.
129 Id. (citing Occupational Exposure to Respirable Crystalline Silica, 81 Fed. Reg. at 16,455).
130 Id. (citing 81 Fed. Reg. at 16,455).
131 See id. at 282.
132 See id.
133 Id.
134 Id. at 296.
feasibility of the rule. Despite industry objections, the court also found OSHA’s implementation timetable and PEL dictates reasonable.

V. COURT REVIEW OF UNION CHALLENGES TO THE OSHA SILICA REGULATIONS

Like industry, the unions also challenged the medical surveillance provisions of the Silica Rule. The unions, however, argued that the Silica Rule did not go far enough to protect the workers. While the D.C. Circuit rejected the industry challenge to medical surveillance, the court remanded the case back to OSHA to address union concerns concerning medical removal.

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135 The OSH Act requires OSHA to promulgate health standards to protect workers “to the extent feasible.” 29 U.S.C. § 655(b)(5) (2012). This requirement demands OSHA show that proposed rules are economically feasible. OSHA, 878 F.3d at 290–91. As with technological feasibility, the scope review is narrowly circumscribed. Id. The court explained:

A rule is economically feasible in a particular industry so long as it does not “threaten massive dislocation to, or imperil the existence of, the industry.” Thus, “[a] standard is not infeasible simply because it is financially burdensome or even because it threatens the survival of some companies within an industry.” “OSHA is not required to prove economic feasibility with certainty, but is required to use the best available evidence and to support its conclusions with substantial evidence.” OSHA must also provide “a reasonable estimate of compliance costs and demonstrate a reasonable likelihood that these costs will not threaten the existence or competitive structure of an industry, even if it does portend disaster for some marginal firms.” “Courts, [moreover], cannot expect hard and precise estimates of costs.” . . . In its economic feasibility analysis, OSHA developed estimates of the annualized cost of compliance for each affected industry—and for small and very small employers within each industry—and compared those costs against industry revenues and profits. OSHA explained that “while there is no hard and fast rule,” it “generally considers a standard to be economically feasible” for an industry where annualized costs of compliance are less than one percent of revenue or ten percent of profit. OSHA considers this benchmark to be “fairly modest,” so costs exceeding the threshold do not imply per se infeasibility, but rather serve as a trigger for further analysis . . . OSHA engaged in further inquiry into the impact on these firms and reasonably concluded that the Rule did not threaten “massive industry dislocation” . . . OSHA’s cost estimates in each of these industries are inevitably imperfect due to the limitations of available data and the uncertainties inherent in predicting future costs. But this is why “hard and precise estimates of costs” are not required. OSHA’s only obligation is to confirm, on the basis of substantial evidence, that its rule does not “threaten massive dislocation to, or imperil the existence of, the industry.” There can be little doubt that OSHA has done so here.

Id. at 296–97, 300 (internal citations omitted).

136 Id. at 299.
137 Id. at 304.
138 See id.
139 Id. at 308–09.
Union concerns about medical surveillance divided based on the differing needs of construction and general industry workers.\textsuperscript{140} Construction unions were concerned about the initial trigger for when an employer must offer a medical exam.\textsuperscript{141} General industry unions were concerned about what happens after the medical exam is completed.\textsuperscript{142}

Under the Silica Rule, general industry employers must offer triennial exams to any employee “who will be occupationally exposed . . . at or above the action level for 30 or more days per year.”\textsuperscript{143} For general industry, OSHA applied an action level of 25 \(\mu g/m^3\) because the agency concluded that employees exposed at levels lower than the 50\(\mu g/m^3\) PEL still could face “a significant risk of developing silica-related diseases.”\textsuperscript{144} In contrast, OSHA determined that for the construction industry it would be impractical to trigger medical surveillance at any set exposure limit “because OSHA anticipated that most construction employers would rely on Table 1 and would not make exposure assessments.”\textsuperscript{145} Thus, OSHA required construction employers to provide medical surveillance to employees using a respirator for 30 days or more per year with that employer.\textsuperscript{146} The Unions were concerned, however, that some construction employees might be getting inadequate protection and be unable to take advantage of needed medical surveillance because the employees work for multiple employers and use a respirator for 30 days or more in a year working on different sites with different employers.\textsuperscript{147} The construction unions said the potential that the Silica Rule was under-inclusive was acute in the construction industry because “[e]mployment in the construction industry is transitory and intermittent.”\textsuperscript{148} Hence, the construction unions argued the OSHA standard erred in that medical surveillance should be triggered if an employee is required to use a respirator for even one day.\textsuperscript{149}

The D.C. Circuit rejected this challenge, stating that OSHA had “almost unlimited discretion . . . to devise means to achieve the congressionally

\begin{enumerate}
\item \textit{Id.} at 304–05.
\item \textit{Id.} at 305.
\item \textit{Id.} at 304.
\item \textit{Id.} (quoting 29 C.F.R. §§ 1910.1053(i)(1)(i), 1910.1053(i)(3) (2018)).
\item \textit{Id.} at 304–05.
\item \textit{Id.} at 305 (citing Occupational Exposure to Respirable Crystalline Silica, 81 Fed. Reg. at 16,455).
\item \textit{Id.} (“Because respirator use in the construction industry (in Table 1) is generally tied to exposure at or above the PEL of 50 \(\mu g/m^3\), construction employees may be exposed to greater silica concentrations before receiving medical surveillance than general industry employees, for whom surveillance is tied to exposure at the action level of 25 \(\mu g/m^3\).”).
\item \textit{Id.}
\item \textit{Id.}
\end{enumerate}
mandated goal."\textsuperscript{150} OSHA had considered a range of triggers for the medical surveillance requirement and selected 30 days: "strik[ing] a reasonable balance between the administrative burden of offering medical surveillance to all employees, many of whom may not be further exposed or only occasionally exposed, and the need for medical surveillance for employees who are regularly exposed and more likely to experience adverse health effects."\textsuperscript{151}

The Unions challenged OSHA’s decision making in failing to provide medical removal protection (MRP) for employees exposed to silica on the job:

- "whose doctors recommend permanent removal;"
- "whose doctors recommend temporary removal to alleviate exacerbated symptoms of chronic obstructive pulmonary disease (COPD);"
- "whose doctors recommend temporary removal pending a determination by a specialist;" and
- "who are unable to wear a required respirator."\textsuperscript{152}

MRP is not a uniform protection provided to all employees by the OSH Act. To the contrary, OSHA included MRP protection for workers in only six previous health standards.\textsuperscript{153} Nonetheless, the D.C. Circuit remanded the case to OSHA to reconsider MRP for three of the four situations raised by the Unions.\textsuperscript{154} The D.C. Circuit rejected the Unions’ demand for MRP for employees unable to wear a respirator because the court found the Unions did not meet their burden of showing that MRP would provide more than a de minimis benefit.\textsuperscript{155} The court said OSHA should reconsider MRP where an employee’s doctor recommended permanent removal due to silica exposure because OSHA had recognized that there can be health benefits from temporary removal and yet the agency did not provide “an adequate reason for rejecting some period of MRP for employees whose doctors recommend permanent removal . . . .”\textsuperscript{156} Similarly, the court asked OSHA to reconsider MRP where an employee’s doctor recommended temporary removal to alleviate exacerbated symptoms of COPD because the fact

\textsuperscript{150} \textit{Id.} at 306 (quoting Bldg. and Constr. Trades Dep’t v. Brock, \textit{(Asbestos)}, 838 F.2d 1258, 1271 (D.C. Cir. 1988)).
\textsuperscript{151} \textit{Id.} (quoting 81 Fed. Reg. at 16,816).
\textsuperscript{152} \textit{Id.} at 307.
\textsuperscript{154} \textit{OSHA}, 878 F.3d at 309.
\textsuperscript{155} \textit{Id.}
\textsuperscript{156} \textit{Id.} at 308.
that symptoms might recur when the removal ends is not by itself a sufficient reason for rejecting temporary MRP.\textsuperscript{157}

Finally, the D.C. Circuit required OSHA to reconsider its refusal to allow MRP where an employee's doctors recommend temporary removal pending a determination by a specialist.\textsuperscript{158} The court explained that one type of silicosis—"acute silicosis"—can occur within weeks to months after high levels of silica inhalation.\textsuperscript{159} Indeed, although rare, acute silicosis can lead to rapid death.\textsuperscript{160} In light of scientific evidence on the possibility of development of acute silicosis, OSHA must explain "why temporary removal would not benefit those workers whose physicians have found enough initial signs of the disease to indicate referral to a specialist."\textsuperscript{161} The court, however, specified that the remand required only that the agency "better explain its decision not to require MRP in this circumstance as well."\textsuperscript{162} In short, the court held:

In sum, we reject all of the petitioners' challenges to the Silica Rule, with three exceptions. We hold that OSHA was arbitrary and capricious in declining to require MRP for some period when a medical professional recommends permanent removal, when a medical professional recommends temporary removal to alleviate COPD symptoms, and when a medical professional recommends temporary removal pending a specialist's determination. We remand to the agency to reconsider or further explain those aspects of the Rule.\textsuperscript{163}

VI. ALEC & THE ASBESTOS AND SILICA CLAIMS PRIORITY ACT

While the federal government has been working to create greater protection for workers from silica exposure, there are currently renewed efforts in the states to restrict worker protections. The American Legislative Exchange Council ("ALEC") began developing model legislation for state legislatures to consider, entitled the "Asbestos and Silica Claims Priorities Act," on January 1, 2003.\textsuperscript{164} The ALEC draft legislation was finalized on January 1, 2007,\textsuperscript{165}

\textsuperscript{157} Id.
\textsuperscript{158} Id. at 308-09.
\textsuperscript{159} Id.
\textsuperscript{160} Id. at 309.
\textsuperscript{161} Id.
\textsuperscript{162} Id.
\textsuperscript{163} Id.
\textsuperscript{165} Id.

The ALEC model statute is premised on the notion that silica “claimants frequently are identified through the use of interstate, for-profit, screening companies.” According to ALEC, the recruited litigants “often involve individuals with no demonstrable impairment.” These individuals “are not sick and likely will never develop an impairing condition caused by exposure to asbestos or silica.” Thus, ALEC asserts that the silica screening processes are “subject to substantial abuse and potential fraud in federal silica litigation.”

For that reason, ALEC concludes that “sound public policy requires that the claims of persons with no present physical impairment caused by . . . silica exposure be deferred to give priority to physically impaired claimants, and to safeguard the jobs, benefits, and savings of workers in affected companies.” Limiting these suits, ALEC asserts, will free the courts for more pressing litigation.

The ALEC model legislation changes state tort law to:

- set specific medical criteria to establish a silica claim;
- toll the statutes of limitations for persons exposed to silica but who do not demonstrate present silica-related impairment; and
- enhance judicial oversight of silica claims.

While numerous states have enacted legislation concerning litigation due to workplace silica exposure, to date only four states adopted the ALEC model. West Virginia is the most recent state to enact the ALEC model statute and it did

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166 Id.
167 Id.
168 Id. § 2(a)(12).
169 Id.
170 Id. § 2(a)(16).
171 Id. § 2(a)(13) (citing In re Silica Products. Liab. Litig., 398 F. Supp. 2d 563 (S.D. Tex. 2005)).
172 Id. § 2(a)(15).
173 Id. § 2(a)(16).
174 Id. § 2(b).
175 Numerous states have enacted legislation regarding silica claims. E.g., FLA. STAT. ANN. § 774.204 (West 2018); GA. CODE ANN. § 51-14-3 (West 2018); KAN. STAT. ANN. § 60-4902 (West 2018); OKLA. STAT. ANN. tit. 76, § 91 (West 2018); S.C. CODE ANN. §§ 44-135-10-110 (2018); TENN. CODE ANN. § 29-34-301-309 (West 2018); TEX. CIV. PRAC. & REM. CODE ANN. §§ 90.001–90.012 (2018); TEX. CIV. PRAC. & REM. CODE ANN. §§ 90.051–90.058 (2018).
so using the name suggested by ALEC.\textsuperscript{176} Oklahoma, Iowa and Tennessee also enacted by ALEC model statute.\textsuperscript{177}

The trend to limit damages from workplace silica exposure, including medical costs, treatment and surveillance makes increased preventative protections in the workplace critical since the law limits the damages sick exposed workers and their families can collect from employers who allowed (or even encouraged) on-the-job silica exposure.

VII. CONCLUSION

Approximately 2.2 million people a year are currently exposed to silica in the workplace.\textsuperscript{178} About 300 people die a year from silicosis,\textsuperscript{179} a disease that has been considered “100% preventable” by the Department of Labor since 1936.\textsuperscript{180} Introduction of the new Silica Rule will likely prevent 642 deaths and 918 cases of silica-related disease in workers each year\textsuperscript{181} and save the U.S. taxpayers about $2.8 to $4.7 billion annually over the next 60 years\textsuperscript{182} while costing individual employers only between $550 and $1,242 per year.\textsuperscript{183}

The Department of Labor has studied the adverse impact of silica dust on workers since Congress investigated the enormous workplace fatalities associated with the building of the Hawks Nest Tunnel in West Virginia beginning in 1930.\textsuperscript{184} DOL first suggested workplace protections for silica exposure in 1936. The first silica rule was promulgated in 1971, but no changes have been made since.\textsuperscript{185}

OSHA proposed the new Silica Rule after extensive scientific investigation and review begun by Secretary Reich during the Clinton Administration and renewed under the Obama Administration because the agency determined that strong evidence showed that the 1971 silica PELs did not adequately protect worker health.\textsuperscript{186} The 1971 PELs did not reflect recent

\textsuperscript{176} W. VA. CODE §§ 55-7G-4 to -10 (2018).
\textsuperscript{177} See OKLA. STAT. ANN. tit. 76, § 91 (West 2018); IOWA CODE ANN. §§ 686B.1–9 (2018); TENN. CODE ANN. §§ 29-34-301–309 (West 2018).
\textsuperscript{178} Proposed Crystalline Silica Rule, supra note 56.
\textsuperscript{179} Silica Advisor, supra note 78.
\textsuperscript{180} Id.
\textsuperscript{182} Proposed Crystalline Silica Rule, supra note 56.
\textsuperscript{183} Id.
\textsuperscript{184} See The Campaign to End Silicosis, supra note 42.
\textsuperscript{185} See, e.g., Iowa Legislature, supra note 49, at 2080 (providing notice of legislature’s intent to amend the Iowa Administrative Code).
\textsuperscript{186} See Occupational Exposure to Respirable Crystalline Silica, 81 Fed. Reg. at 16,380-82; Proposed Crystalline Silica Rule, supra note 56.
scientific evidence since they were based on research from the 1960s and earlier.\(^\text{187}\) Since 1971, the U.S. National Toxicology Program, the International Agency for Research on Cancer, and the National Institute for Occupational Safety and Health all categorically and definitively identified respirable crystalline silica as a human carcinogen.\(^\text{188}\)

The new standard changed the PEL to 50 µg/m\(^3\) of respirable crystalline silica averaged over an 8-hour day for all industries covered by the rule.\(^\text{189}\) Two provisions in the Silica Rule were deliberately similar to existing voluntary industry consensus standards.\(^\text{190}\) Under the updated Silica Rule, employers must measure worker exposure to silica, limit workers’ access to areas with high levels of respirable silica, reduce exposures using appropriate technology, provide medical exams to workers exposed to high levels of respirable silica, and train workers about the health hazards of silica and how to limit worker silica exposure.\(^\text{191}\)

Both industry and unions challenged the new Silica Rule.\(^\text{192}\) The D.C. Circuit rejected all industry challenges but ordered OSHA to reconsider and justify its decisions not to require Medical Removal Protection (allowing doctors to remove sick workers from exposure to silica under certain conditions) for some period when a medical professional recommends permanent removal, temporary removal to alleviate COPD symptoms, and temporary removal pending a specialist’s determination.\(^\text{193}\) The court so remanded to OSHA for reconsideration or further explanation “[b]ecause OSHA acknowledges the health benefit of removal and has not given an adequate reason for rejecting some period of MRP for employees whose doctors recommend permanent removal.”\(^\text{194}\)

The court said, “OSHA may have valid reasons for rejecting MRP for temporary removal to alleviate exacerbated symptoms, but the fact that symptoms might recur when the removal ends is not by itself a sufficient reason. Thus, a remand to further address this circumstance is also warranted.”\(^\text{195}\)

In most circumstances, the D.C. Circuit’s opinion would be considered an industry defeat and a victory for labor unions. The new Silica Rule would be reconsidered to determine if further protections were warranted. In the current

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\(^{187}\) Proposed Crystalline Silica Rule, supra note 56.

\(^{188}\) Id.; see also Occupational Exposure to Respirable Crystalline Silica, 81 Fed. Reg. at 16,381 (discussing the carcinogenicity of crystalline silica).

\(^{189}\) Proposed Crystalline Silica Rule, supra note 56

\(^{190}\) Id. For example of industry standards, see sources cited supra note 82.

\(^{191}\) Proposed Crystalline Silica Rule, supra note 56.


\(^{193}\) Id. at 307–09.

\(^{194}\) Id. at 308.

\(^{195}\) Id.
political climate, however, any remand to OSHA to reconsider and justify rules puts the regulation at risk.