United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued November 16, 2015 Decided July 5, 2016

No. 14-1285

ROSEBUD MINING COMPANY AND PARKWOOD RESOURCES, INC.,
PETITIONERS
v.
MINE SAFETY AND HEALTH ADMINISTRATION AND JOSEPH A. MAIN, ASSISTANT SECRETARY OF LABOR FOR MINE SAFETY AND HEALTH,
RESPONDENTS

No. 14-1286

CANYON FUEL COMPANY, LLC, ET AL.,
PETITIONERS
v.
MINE SAFETY AND HEALTH ADMINISTRATION AND JOSEPH A. MAIN, ASSISTANT SECRETARY OF LABOR FOR MINE SAFETY AND HEALTH,
RESPONDENTS

On Petitions for Review of Decisions of the Assistant Secretary of Labor for Mine Safety and Health

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Ralph Henry Moore II argued the cause for the petitioners. *Patrick W. Dennison* was with him on brief.

Lynne B. Dunbar, Attorney, United States Department of Labor, argued the cause for the respondents. *W. Christian Schumann*, Counsel, was with her on brief.

Before: HENDERSON, ROGERS and KAVANAUGH, *Circuit Judges*.

Opinion for the Court filed by Circuit Judge HENDERSON.

KAREN LECRAFT HENDERSON, *Circuit Judge*: Several coal mine operators—Rosebud Mining Company, Parkwood Resources, Inc., Canyon Fuel Company, LLC, Mountain Coal Company, LLC, Bowie Resources, LLC and Peabody Sage Creek Mining, LLC (collectively, petitioners)—seek review of two orders of the United States Department of Labor (Labor)—per its Mine Safety and Health Administration (MSHA)—modifying the application of mandatory mine safety standards to their respective mines. The petitioners contend that the orders contain three conditions unnecessary to ensure adequate mine safety, thus making them arbitrary and capricious. For the reasons set forth below, we deny the petitions for review.

I. BACKGROUND

Under section 101(a) of the Federal Mine Safety and Health Act of 1977 (Mine Act), 30 U.S.C. §§ 801 *et seq*., the Labor Secretary must promulgate "mandatory health or safety standards for the protection of life and prevention of injuries in coal or other mines." 30 U.S.C. § 811(a). The Assistant Secretary of Labor for Mine Safety and Health (Assistant Secretary)[1] may grant mine-specific modifications of the

[1] For MSHA matters, the Labor Secretary acts through the Assistant Secretary. 29 U.S.C. § 557a.

standards if he finds that "an alternative method of achieving the result of such standard exists which will at all times guarantee no less than the same measure of protection afforded the miners of such mine by such standard, or that the application of such standard to such mine will result in a diminution of safety to the miners in such mine." *Id.* § 811(c). Thus, the statute permits modification if an equally effective alternative exists or if the standard *itself* negatively affects mine safety.[2] To satisfy either option, MSHA conducts a two-step inquiry which asks, first, whether the proposed alternative "promote[s] the same safety goals as the original standard with no less than the same degree of success" and, second, whether the "modification would achieve a net gain, or at least equivalence, in *overall* mine safety." *United Mine Workers of Am., Int'l Union v. MSHA*, 928 F.2d 1200, 1202 (D.C. Cir. 1991) (*S. Ohio Coal Co.*) (emphasis added).[3] At the second step, "both advantages and

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[2] The latter scenario seems counter-intuitive—MSHA plainly does not intend to harm miners—but can be conceptualized as follows: assume *arguendo* that MSHA requires all elevator shafts to be manually operated, reasoning that elevators with electrical components could spark and start a mine fire. An operator with an especially deep shaft might argue that the requirement nonetheless results in a diminution in mine safety because a manual elevator is relatively slow and, in a mine disaster, could prevent miners from surfacing quickly. For another example, *see Int'l Union, United Mine Workers of Am. v. Fed. Mine Safety & Health Admin.*, 924 F.2d 340 (D.C. Cir. 1991) (*Quarto Mining*).

[3] We have concluded that the "diminution of safety" clause requires only that the Assistant Secretary determine "whether application of a particular mandatory safety regulation would be unsafe" and that "the Assistant Secretary need not balance the efficacy of the existing rule against the net benefits produced by the proposed modification," *Quarto Mining*, 924 F.2d at 343, basing our interpretation on the Assistant Secretary's practice at the time.

disadvantages of the alternative method" are weighed, including those that are unrelated to the original standard. *Id.* The party seeking modification has the burden of proof to establish that the proposed modification complies with section 811(c). 30 C.F.R. § 44.30(b).

The modification process begins with an operator's filing a petition for modification with MSHA. *See id.* § 44.10. After an investigation, the MSHA Administrator issues a proposed order. *Id.* § 44.13. The operator may request a hearing before an administrative law judge (ALJ), *id.* §§ 44.14, 44.15, 44.20, who, after investigation/hearing, issues his decision, *id*. § 44.32. Any party—including MSHA—may then appeal to the Assistant Secretary. *Id.* § 44.33. The Assistant Secretary's order may contain "special terms and conditions" which "shall have the same effect as a mandatory safety standard." *Id.* § 44.4(c). "Only a decision by the Assistant Secretary [is] final agency action for purposes of judicial review." *Id.* § 44.51.

These six petitions for review involve MSHA's "permissibility" requirements, which, in general, mandate that certain equipment located in certain mine areas be approved by MSHA (*i.e.*, that they be permissible). The focus of the permissibility requirements is to "assure that [electrically operated] equipment will not cause a mine explosion or mine

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See id. at 344. The record reveals some confusion, however, about whether MSHA now applies the *Southern Ohio Coal Co.* test to *both* statutory options or to the first only. *Compare* ALJ's Decision and Order at 14, Rosebud Mining Co., Case Nos. 2010-MSA-1, 2011-MSA-2, -11, -12 (Dep't of Labor Apr. 11, 2013) (Rosebud ALJ Order I) *with* Assistant Secretary's Decision and Order at 13, Case Nos. 2010-MSA-1, 2011-MSA-2, -11, -12 (Dep't of Labor Nov. 14, 2013) (Rosebud Order I). Because the petitioners do not raise this issue, we do not reach it.

fire . . . . " 30 C.F.R. § 75.2; *see also* Administrator's Proposed Decision and Order at 5, Canyon Fuel Co., Docket No. M-2009-025-C (Dep't of Labor May 6, 2011) ("MSHA requirements for permissible . . . equipment are intended to prevent mine explosions from unpredicted methane accumulations, methane outbursts, or float coal dust in suspension by removing a possible ignition source."). MSHA does not define "non-permissible" but its definition of "permissible" substantially illuminates the former. Permissible equipment includes, as relevant here, "completely assembled electrical machine[ry]" for which MSHA has issued "a formal approval." 30 C.F.R. § 18.2. Thus, electrical equipment without this approval is non-permissible and, accordingly, unauthorized in certain mine areas.[4] Not all mine equipment is subject to the permissibility scheme—for example, "[m]echanical surveying equipment," which "poses no risk of ignition," requires no modification order for use. Rosebud ALJ Order I at 5.[5] For our review, the permissibility scheme breaks down into three categories: (1) non-permissible equipment to which the non-use in certain mine areas restriction applies; (2) non-permissible equipment with a MSHA modification which removes the non-use restriction and (3) equipment (like mechanical surveying equipment) for

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[4] The parties stipulated that "[t]he concern with any electrical equipment is that if used in an explosive atmosphere it will produce a spark, fire or heating with enough energy that an ignition of methane and/or coal dust may result, possibly leading to a fire or explosion." Stipulations ¶ 19, In re Rosebud Mining Co., Docket Nos. 2010 MSA-1, 2011 MSA-2, 2011-MSA-12, 2011 MSA-11 (Dep't of Labor Mar. 28, 2013) (hereinafter Stipulations).

[5] Relatedly—although not relevant for our review—MSHA deems permissible "intrinsically safe" equipment, that is, equipment "incapable of releasing enough electrical or thermal energy . . . to cause ignition." 30 C.F.R. § 18.2.

which no modification order is needed to authorize its use in certain mine areas.[6]

The petitioners sought to use non-permissible equipment and petitioned for modification of the following MSHA safety standards: (1) 30 C.F.R. § 75.500, the standard requiring, *inter alia*, that electrical equipment used in or inby the last crosscut[7] constitute permissible equipment, (2) *Id.* § 75.507-1, the standard requiring that electrical equipment used in return

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[6] As the parties stipulated, there is a difference between category two equipment and "permissible" equipment. The parties refer to category two equipment as "permitted" equipment—meaning it is "non-permissible equipment allowed to be used at a particular mine pursuant to the granting of a petition for modification." Stipulations ¶ 29. By contrast, *permissible* equipment has "a formal approval [without conditions] . . . issued by MSHA[]." *Id.*

[7] Throughout the record, this area of the mine is referred to as "in or inby the last *open* crosscut." *See, e.g.*, Rosebud Order I at 17 (emphasis added); *see also FMC Wyoming Corp., v. MSHA*, 16 FMSHRC 1787, 1994 WL 445344, at *4 (Aug. 16, 1994) ("the term 'last open crosscut' is interchangeable with 'last crosscut' "). MSHA defines "[t]he area of a coal mine inby the last open crosscut" as the "working place." 30 C.F.R. § 75.2. The parties stipulated that the "the 'last open crosscut' is the last crosscut without a permanent stopping in a line of pillars containing the permanent stoppings that separate the intake air courses and the return air courses. This area includes the most advanced mining area in the mine, where the ventilating air reaches the areas of active coal removal and deepest penetration and starts its course back out of the coal mine." Stipulations ¶ 10. " 'Inby' refers to something facing the direction of the coal face. Conversely, 'outby' refers to the direction facing the mine entrance (the surface)." *Andalex Res., Inc. v. MSHA*, 792 F.3d 1252, 1254 n.2 (10th Cir. 2015).

airways[8] constitute permissible equipment and (3) *Id.* § 75.1002, the standard requiring that electrical equipment used within 150 feet of pillar workings or longwall faces[9] constitute permissible equipment. In short, the modification petitions sought authorization to use non-permissible equipment in three mine locations where use of the equipment was otherwise off-limits. Each of the three described locations is "more likely to have an explosive environment" than other mine areas, thus triggering the applicable standard. Assistant Secretary's Decision and Order at 27, Canyon Fuel Co., Case Nos. 2011-MSA-00006 to 00009, 2011-MSA-00014 to 00021, 2013-MSA-00012, -00024, -00025, -00037 (Dep't of Labor Nov. 24, 2014) (Canyon Fuel Order).

A. MSHA PROCEEDINGS REGARDING ROSEBUD AND PARKWOOD

Petitioners Parkwood Resources and Rosebud Mining filed identical modification petitions in December 2008 and January 2009.[10] Each operator sought to use non-permissible

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[8] Return air is "[a]ir that has ventilated the last working place on any split of any working section or any worked-out area whether pillared or nonpillared. If air mixes with air that has ventilated the last working place on any split of any working section or any worked-out area, whether pillared or nonpillared, it is considered return air. For purposes of § 75.507–1, air that has been used to ventilate any working place in a coal producing section or pillared area, or air that has been used to ventilate any working face if such air is directed away from the immediate return is return air." 30 C.F.R. § 75.301.

[9] Pillar workings and longwall faces are simply "areas in which miners extract coal." *Andalex Res.*, 792 F.3d at 1254.

[10] The Parkwood and Rosebud petitions were subsequently consolidated at the administrative level and we follow suit, hereinafter referring to them as the Rosebud petitioners.

equipment—specifically, battery-powered (*i.e.*, electrical) surveying instruments—[11]in or inby the last open crosscut and in return airways. *See* 30 C.F.R. §§ 75.500; 75.507-1. They maintained that the two applicable safety standards hampered both their ability to accurately and quickly map the mines—resulting in a "diminution of safety" to miners, *see* 30 U.S.C. § 811(c)—[12]as well as their compliance with other MSHA regulations, *see* 30 C.F.R. § 75.372 (requiring "up-to-date map of the mine drawn to a scale of not less than 100 nor more than 500 feet to the inch"), *id.* § 75.1200 (requiring mine operator to maintain "accurate and up-to-date map" of mine "in a fireproof repository located in an area on the surface of the mine"), and state law, *see* 52 PA. STAT. ANN. § 690-224 (requiring "professional quality map of the mine on a scale of not less than 200 feet to the inch"), that require current and accurate mine maps. To obtain the modification, the Rosebud petitioners proposed seven conditions on their use of the NPESE, *see generally S. Ohio Coal Co.*, 928 F.2d at 1202 (alternative must "promote the same safety goals as the original standard with no less than the same degree of

[11] This equipment is hereinafter referred to as non-permissible electronic surveying equipment (NPESE).

[12] According to all six petitioners, accurate surveying is critical because it "prevents intersection of the mine with abandoned working of other mines which may contain water in large quantities, explosive gas or the absence of oxygen." Pet'rs' Br. at 12. Surveying is also necessary to avoid "sealed areas," *id*. at 13, which areas MSHA subjects to regular "monitoring." *See* 30 C.F.R. § 75.336.

success"), one of which—no use when float coal dust[13] is in suspension[14]—is of particular relevance to our review.[15]

1. ADMINISTRATOR'S DECISION

The Rosebud petitioners' "diminution of safety" argument pressed that the NPESE was needed in order to accurately map mines because of its ability to obtain measurements superior to non-electric (mechanical) surveying equipment. The Administrator rejected the Rosebud petitioners' arguments for two reasons. First, he determined that "when using [NPESE] the equipment need not be taken into return air or inby the last open crosscut if the surveying is carefully coordinated with the mining activity." Administrator's Proposed Decision and Order at 5, Parkwood Res. Inc., Docket No. M-2008-054-C (Dep't of Labor Jan. 29, 2010). In other words, he found that the Rosebud petitioners could use their preferred surveying tools—the NPESE—without violating the permissibility regulations because they did not need to use the equipment in the areas to which the permissibility regulations apply. Thus the regulations restricting the areas into which the operators could

[13] "Float coal dust" is defined as "coal dust consisting of particles of coal that can pass a No. 200 sieve." 30 C.F.R. § 75.400–1(b).

[14] MSHA regulations do not define the term "in suspension" but the parties stipulated that it means dust "suspended in the air during mining." Stipulations ¶ 33.

[15] The other conditions included: (1) regular examination of the NPESE, (2) continuous monitoring for methane during use of NPESE, (3) mandatory shutdown if methane concentration reaches a certain level, (4) changing and charging of batteries in fresh air, (5) proper training of personnel using NPESE and (6) use of NPESE after MSHA inspection only.

use NPESE did not impair the miners' ability to map the mines to the desired accuracy level and likewise did not (because of inaccurate mapping) result in a diminution of safety. Second, the Administrator determined that "levels of accuracy fully capable of protecting miners can be achieved using optical non-electric surveying equipment"—*i.e.*, mechanical equipment—and "can achieve even higher levels of accuracy . . . through repetition of measurements and statistical applications." *Id*. Thus, to him, use of NPESE was not necessary.

In addition, the Administrator found the proposed conditions duplicative because many of them simply tracked MSHA regulations; those that did not were found insufficient because they failed to ensure an adequate level of safety. Thus, the Rosebud petitioners' proposed conditions did not "promote the same safety goals as the original standard with no less than the same degree of success." *See S. Ohio Coal Co.*, 928 F.2d at 1202. Regarding the proposed float coal dust ban, the Administrator found that its implementation was impossible unless mining were to cease during surveying.

2. ALJ'S DECISION

The Rosebud petitioners sought ALJ review. The ALJ held two separate hearings on the consolidated petitions, made findings of fact and issued his decision on April 11, 2013.

The ALJ first explained how methane and coal dust can result in a mine fire. First, he observed that methane is explosive at an aerial concentration between five and fifteen per cent. According to him, coal dust can also result in a mine fire but that, in order to ignite, the dust must be "in suspension . . . [and] sufficiently thick that you couldn't see a light bulb that was turned on about four feet in front of you."

Rosebud ALJ Order I at 6 (alterations and quotations omitted). He next recognized that mechanical surveying equipment "poses no risk of ignition" and that, although NPESE *does* present such a risk, nonetheless "it has a low potential for ignition." *Id.* at 5. For support on the latter point, the ALJ relied on the testimony of MSHA electrical engineer Chad Huntley and fire-and-explosion expert Noah Ryder. Huntley estimated "the possibility that both the methane detector would fail and the electronic surveying equipment would ignite at the same time is one in ten thousand." *Id.* at 4. Ryder testified that the potential for a coal dust ignition "inside one of the[] [NPESE]" was "nonexistent" because, through water immersion and dust swab tests, he found that dust would "*settle* on . . . component[s]" in the devices and, "if it settled there, it's not in suspension and won't ignite." *Id.* at 6 & n.9 (emphasis added). Ryder also testified that NPESE was less dangerous than other equipment MSHA has approved via modification petitions.

Some findings were in apparent tension with others. For example, Rosebud surveying manager Michael Groff testified that NPESE "does not get hot when it's running" and that he had "never seen a spark or arc when removing the battery." *Id.* at 5 n.6. But Huntley and Ryder both testified that sparking could occur when "the battery was physically disconnected" or if "an inside component broke." *Id.* at 6. Huntley testified that NPESE could "overheat . . . and ignite methane" but also noted that it had "a thermal breaker for de-energizing the battery pack at a temperature *below* the ignition temperature for methane." *Id.* at 5 n.6 (emphasis added). Some NPESE equipment also came with a manufacturer safety warning indicating that it should not be used in an underground coal mine and that an explosion could

result if so used.[16] Because the manufacturer was unable to testify as to the basis of the warning, however, the ALJ gave it no weight. The ALJ also recognized that Rosebud had been using NPESE "in all areas of [its] mine[s]" for over 20 years and that MSHA, by not issuing any citation during that time, had "tacitly approved [its] use." *Id.* at 13.

The ALJ, concluding that mechanical surveying equipment was "obsolete, far less accurate than electronic surveying equipment, and above all, not realistically available on the commercial market except in used condition," *id.* at 2, approved the petitions. He anticipated that the conditions he set out in his order "promote[d] the same safety goals as the original standard with no less than the same degree of success." *Id.* at 14 (quoting *S. Ohio Coal Co.*, 928 F.2d at 1202). The ALJ's conditions were substantially similar to those contained in the petitions, including the prohibition on surveying in the presence of float coal dust. He added a requirement that the Rosebud petitioners gradually phase out old equipment so that, within five years, the NPESE in use would be no more than five years old. The ALJ thought this condition would "prevent the degradation of [NPESE] seals" through which float coal dust could enter and cause ignition. *Id.* at 17. He observed that his conditions closely replicated those included in an earlier MSHA consent decree allowing NPESE. *Id.* at 4 n.5; *see* Initial Decision Approving Settlement and Order of Dismissal at 2–4, Twentymile Coal Co., Case No. 2007-MSA-00002 (Dep't of Labor Dec. 5, 2007) (Twenty Mile Consent Order).

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[16] Specifically, the warning stated: "Safety Cautions; Warning; May ignite explosively. Never use an instrument near flammable gas, liquid matter, and do not use in a coal mine." Rosebud ALJ Order I at 3.

The ALJ also concluded that "granting [the] petitions for modification would engender a *net gain* in miner safety." Rosebud ALJ Order I at 15 (emphasis in original); *see also S. Ohio Coal Co.*, 928 F.2d at 1202 (asking whether "modification would achieve a net gain, or at least equivalence, in overall mine safety"), because, although "mechanical surveying equipment can meet . . . accuracy requirement[s]," "the use of mechanical equipment may require multiple set ups, increasing the length of surveyors' exposure to hazardous conditions." Rosebud ALJ Order at 15. Moreover, "mechanical parts cannot be reliably calibrated or repaired . . . [and] surveyors are not currently trained in their use. . . . Therefore, application of the [permissibility] standard[s] is less safe than application of the modification, as it is unsafe to use equipment that is not calibrated or repaired properly, or that surveyors have not been trained to use." *Id.* Finally, he reasoned that NPESE "is 8-10 times more accurate than mechanical equipment" and "greater accuracy leads to increased safety in the mines." *Id.*[17]

3. Assistant Secretary's Decision

The Administrator appealed the ALJ's order to the Assistant Secretary who, applying a *de novo* standard of review, conducted an independent analysis of the evidence and rejected many of the ALJ's factual findings. For

[17] The ALJ made no finding regarding diminution of safety, treating the case as one arising under the first prong of 30 U.S.C. § 811(c) (asking whether "an alternative method of achieving the result of such standard exists which will at all times guarantee no less than the same measure of protection afforded the miners of such mine by such standard"). But, as noted, *see supra* n.3, the Rosebud petitioners do not challenge MSHA's application of both section 101(c)'s "alternative method" option and its "diminution of safety" option to their petitions.

example, although MSHA never sanctioned Rosebud for its 20-year use of NPESE, the Assistant Secretary declined to conclude that MSHA had thus tacitly approved thereof in view of the fact that Rosebud produced no evidence that MSHA knew of the use; moreover, MSHA *had* sanctioned other operators for similar use. The Assistant Secretary also disputed Ryder's opinion that the Rosebud petitioners' NPESE was "well-sealed against [methane] gas and [coal] dust" ingress because Ryder had tested "none of . . . the specific instruments that [the Rosebud petitioners] identified in [the] petitions." Rosebud Order I at 28–29. Moreover, the Assistant Secretary found Ryder's assertion that he tested substantially similar equipment "suspect" given Ryder's failure to "take apart any of the specific instruments identified in the petitions" to determine their similarity *vel non*. *Id.* at 29. In addition, the Assistant Secretary credited Huntley's testimony that tended to discredit Ryder's tests—specifically, that, according to International Electrotechnical Commission standards, "ingress protection tests" using "dust and moisture" were not proper surrogates for gas. *Id.* at 30. And, even assuming Ryder's tests were fair proxies, "moisture was detected inside all of the pieces of used equipment that Ryder tested." *Id.*

The Assistant Secretary also rejected the ALJ's characterization of some of Huntley's testimony. For instance, the "one-in-ten-thousand probability" of both the "methane detector failing and the electronic surveying equipment igniting" was based on a premise with which Huntley explicitly disagreed. *Id.* at 28–29 n.12. The Assistant Secretary also rejected the ALJ's Ryder-supported conclusion that coal dust did not present an ignition concern. Although "Ryder testified that coal dust . . . would settle on a component and not remain in suspension"—thus, not igniting—Huntley testified that coal dust can "enter non-

permissible electronic equipment, layer itself on internal components, and cause the equipment to overheat and ignite methane." *Id.* at 32. The Assistant Secretary also disagreed with the ALJ's conclusion that, "because the equipment has internal thermal breakers that are designed to de-energize the battery pack at a temperature below the ignition temperature of methane, coal dust layering on the internal components . . . is not a concern," *id.* at 32–33, because, the Assistant Secretary opined, "thermal breakers can fail, and there [wa]s no evidence concerning their reliability," *id.* at 33. Moreover, he noted the likelihood of a coal dust-based explosion even in the absence of the required aerial concentration because coal dust can "be rapidly placed in suspension, [and] even a vigilant surveyor may not have the time to de-energize his instrument before it encounters an explosive concentration of coal dust." *Id.*

Finally, the Assistant Secretary disagreed with the ALJ on the importance of the NPESE warning. Although the manufacturer was unable to explain the reason for the warning, "[the Rosebud petitioners], not the Administrator, ha[d] the burden of proof in th[e] proceeding." *Id.* at 34 (citing 30 C.F.R. § 44.30(b)).

On November 14, 2013, the Assistant Secretary issued his decision upholding the ALJ's modification grant but substantially modifying and tightening the conditions. In addition to prohibiting NPESE use when float coal dust was in suspension, the Assistant Secretary required that coal production shut down while the equipment was used in or inby the last open crosscut and in return air and that, if "viable" *mechanical* equipment became available, use of NPESE must cease. Rosebud Order I at 50. With these conditions in place, the Assistant Secretary concluded that the modification "promotes the same safety goals as [the

standards] with no less than the same degree of safety. . . . [and] that the overall effect of the proposed alternative method, including the modifications . . . will achieve at least a net least [sic] equivalence in overall mine safety." *Id.* at 14 (applying *S. Ohio Coal Co.* test, 928 F.2d at 1202).

The Assistant Secretary remanded to the ALJ to consider two conditions for which the record contained insufficient support (and which are not before us on appeal). The ALJ subsequently approved a consent agreement applying four new conditions (in lieu of the remanded pair) and the Rosebud petitioners then appealed to the Assistant Secretary to renew their objections to the originally disputed conditions and to facilitate judicial review therefrom.[18] *See* 30 C.F.R. § 44.51 ("Only a decision by the Assistant Secretary [is] final agency action for purposes of judicial review."). On November 24, 2014, the Assistant Secretary issued Rosebud Order II, once again rejecting the Rosebud petitioners' arguments.

The Rosebud petitioners argued in the second round before the Assistant Secretary that three of the unchanged requirements "[we]re unnecessary to meet [the modification] standard." Rosebud Order II at 3. It was undisputed that, with the Assistant Secretary's conditions, the modification grant "guarantee[d] no less than the same measure of protection afforded the miners of such mine by" the permissibility standards, *see S. Ohio Coal Co.*, 928 F.2d at

[18] The Administrator asserted that the Rosebud petitioners' objections "essentially reargue[d] matters already unsuccessfully litigated" and the Assistant Secretary accordingly treated them "in the nature of a motion for reconsideration." Assistant Secretary's Decision and Order at 3–4, Rosebud Mining Co., Case Nos. 2010-MSA-1, 2011-MSA-2, -11, -12 (Dep't of Labor Nov. 24, 2014) (Rosebud Order II).

1202. The Rosebud petitioners argued that cessation of coal production while surveying took place was unnecessary because (1) "surveying will not be conducted in an entry where production is occurring," Rosebud Order II at 4; (2) "surveying will not be set up close to the face" of the mine, *id.*; (3) "surveying generally will be upwind of the . . . mining machine, and, even when it is downwind, methane and [coal] dust will be removed by the ventilation system" and other safeguards, *id.* at 4–5; (4) "surveyors spend minimal time in or inby the last open crosscut or in the return," *id.* at 7; (5) "surveying equipment . . . does not [cut into or] liberate methane or generate coal dust," *id.*; and (6) the ALJ-imposed condition that, "if one percent methane is detected," use of NPESE was to cease, was sufficient to protect against methane explosions, *id.* at 8.

The Assistant Secretary was not persuaded. He concluded that the first, second and fourth objections relied on factual assertions rebutted by the record.[19] He found the third objection "d[id] not offset the decrease in safety from using" NPESE because the ventilation system and other safety features were "present whether surveyors use mechanical, permissible, or non-permissible surveying equipment." *Id.* at 5–6. Further, he reasoned that "ventilation systems do not always work effectively and [that] operators do not always comply with ventilation requirements." *Id.* at 6. He rejected the fifth objection because, although it "might mean that the risk of using non-permissible surveying equipment is less than

[19] *See id.* at 4 n.2 (Rosebud surveyors testified only that "*usually* we coordinate ourselves in different entries") (emphasis in original); *id.* n.3 ("Rosebud Surveying Manager Groff testified that he has taken shots as close as 50 feet from the face."); *id.* at 7 n.4 ("Groff . . . acknowledged that he does not always set up in the middle of the entry.").

the risk of using other types of non-permissible equipment," it did not mean that NPESE was safe. *Id.* at 7–8. Finally, the Assistant Secretary criticized the methane monitoring condition because the "detectors may fail" and because there "is a lag time in methane detectors and that if there were a sudden inundation of methane, by the time the methane detector registered one percent methane, and by the time the surveyor reacted to shut the surveying equipment off, there might already be an explosive amount of methane surrounding the equipment." *Id.* at 8.

The Rosebud petitioners also argued that the prohibition on surveying when float coal dust existed was both unclear and unnecessary and that the requirement to switch to "viable" mechanical surveying equipment if it became available was unreasonable. Regarding the first claim, the Rosebud petitioners asserted that float coal dust in suspension always exists. But, as the Assistant Secretary observed, the condition could be implemented if production ceased. Moreover, he clarified and interpreted the condition to allow for a "visual determination of whether there is float coal dust in suspension." *Id.* at 11 n.7. As to the latter objection, the Assistant Secretary explained that mechanical equipment would be viable if "sufficiently accurate for use in underground mines" and that MSHA's resources should not be spent on ensuring the NPESE's compliance with conditions if viable mechanical equipment—*i.e.*, equipment that can be used without conditions—exists. *Id.* at 15.

B. MSHA Proceedings Regarding Canyon Fuel and Mountain Coal (Canyon Fuel petitioners)

On July 15, 2009 petitioners Canyon Fuel and Mountain Coal filed nearly identical petitions for modification, seeking to use NPESE in or inby the last crosscut, in return airways

and within 150 feet of pillar workings and longwall faces. *See* 30 C.F.R. §§ 75.500, 75.507-1, 75.1002. As did the Rosebud petitioners, Canyon Fuel and Mountain Coal claimed that the mandatory standards resulted in diminution in miner safety and inability to meet mapping requirements and they proposed comparable conditions, with one exception (the float coal dust condition was omitted). The Administrator denied the petitions for reasons substantially similar to his denial of the Rosebud petitioners' petitions.

The MSHA ALJ held a hearing on the consolidated Canyon Fuel and Mountain Coal petitions and released a decision on April 3, 2014.[20] In light of the intervening Rosebud Order I, MSHA agreed that the petitions should be granted if the Assistant Secretary's conditions set forth in Rosebud Order I were imposed. *See* ALJ's Decision and Order at 7, Canyon Fuel Co., Docket Nos. 2011-MSA-00006 to 00009, 00014 to 00021, 2013-MSA-00024, -00025, -00037 (Dep't of Labor April 3, 2014) ("The issues have evolved since the petitions were first filed. No longer is the issue . . . whether the proposed modification should be granted . . . . The question now is simply what conditions are necessary."). The ALJ subsequently revised the Rosebud Order I conditions—as applied to Canyon Fuel—in three significant respects.

First, he found that it was "not appropriate" to disallow NPESE if and when "viable new mechanical surveying equipment" became available. *Id.* at 13–14. To him, the

[20] Petitioners Peabody Sage Creek and Bowie Resources had similar petitions pending and filed a letter with the ALJ agreeing to be bound by his decision in the Canyon Fuel case. Canyon Fuel references hereinafter include not only Canyon Fuel and Mountain Coal but also Peabody Sage Creek and Bowie Resources.

accuracy of mechanical surveying equipment—even, apparently, "viable" mechanical surveying equipment—was inferior and reduced miner safety. He also found the ban on surveying when float coal dust was in suspension "vague and ambiguous" because the condition did not include a measurement of float coal dust and because surveying would be "impossible"—due to "visibility restrictions"— long before an explosive quantity was in suspension. *Id.* at 20. Finally, he narrowed the restriction on surveying during coal production, requiring only that surveying not occur at "the longwall or a working face during production." *Id.* at 23. The Administrator appealed once more to the Assistant Secretary who issued a final order simultaneously with the Rosebud II Order with identical conditions based on materially similar reasoning.

Both sets of operators timely filed petitions for review.[21] Our jurisdiction arises under section 101(d) of the Mine Act. 30 U.S.C. § 811(d).[22]

II. ANALYSIS

Our review of the Assistant Secretary's two final orders is pursuant to the Administrative Procedure Act, that is, we

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[21] The Rosebud petitioners, however, did not petition for modification of 30 C.F.R. § 75.1002 (permissibility requirement for "equipment . . . located within 150 feet of pillar workings or longwall faces"). With this exception, both sets of petitioners challenge the same conditions and are therefore hereinafter referred to as the petitioners. Because Canyon Fuel made no discrete argument regarding 30 C.F.R. § 75.1002, we reject its challenge thereto without more.

[22] Both sets of petitioners filed a consolidated brief and we likewise consolidate the petitions for disposition.

determine "whether the granting of the petition for modification was arbitrary, capricious, an abuse of discretion or otherwise not in accordance with the law." *Int'l Union, United Mine Workers of Am. v. MSHA*, 830 F.2d 289, 292 (D.C. Cir. 1987) (*Emerald Mine Corp.*) (citing 5 U.S.C. § 706(2)(A)). This "[h]ighly deferential" standard, *AT&T Corp. v. FCC*, 349 F.3d 692, 698 (D.C. Cir. 2003), is especially applicable when we review "technical determinations on matters to which the agency lays claim to special expertise." *Bldg. and Const. Trades Dep't v. Brock*, 838 F.2d 1258, 1266 (D.C. Cir. 1988); *see also Int'l Union, United Mine Workers of Am. v. MSHA*, 407 F.3d 1250, 1258 (D.C. Cir. 2005) (*Jim Walter Res., Inc.*) (equivalent safety determination is within Assistant Secretary's expertise). We uphold the agency if it "considered the relevant factors and articulated a rational connection between the facts found and the choice made." *Nat'l Ass'n of Clean Air Agencies v. EPA*, 489 F.3d 1221, 1228 (D.C. Cir. 2007) (internal quotation marks omitted). Because the challenged orders involve "an area within the [Assistant] Secretary's expertise," *Jim Walter Res., Inc.*, 407 F.3d at 1258, and because they are supported by "substantial evidence and . . . a reasoned explanation," *Bldg. and Const. Trades Dep't.*, 838 F.2d at 1266, we deny the petitions for review.

The thrust of the petitioners' argument is that the three above-discussed conditions—the requirement that coal production cease while surveying with NPESE occurs in or inby the last open crosscut, in return air or within 150 feet of longwall faces or pillar workings (high risk areas), the bar on surveying with NPESE when float coal dust is in suspension and the instruction to use viable mechanical surveying equipment if it becomes available—are unnecessary and

therefore arbitrary and capricious.[23] But the Assistant Secretary weighed the relevant factors—whether the alternative "promote[s] the same safety goals as the original standard with no less than the same degree of success" and whether it improves "overall mine safety," *S. Ohio Coal Co.*, 928 F.2d at 1202—and "articulated a rational connection between the facts found and the choice made," *Nat'l Ass'n of Clean Air Agencies*, 489 F.3d at 1228 (internal quotation marks omitted). In so concluding, we note that "the Mine Act and its standards require *redundant* safety measures." Rosebud Order II at 6 (emphasis added).

A. Cessation of Production

It is uncontested that the condition requiring coal production to stop while the NPESE is used in high risk areas enhances mine safety. What is at issue is whether this

[23] The petitioners also contend that the Assistant Secretary's *de novo* review of the ALJ orders and factual findings is *ultra vires*. Section 101(c) of the Mine Act provides that a petition for a modification hearing is subject to section 554 of the Administrative Procedure Act (APA). 30 U.S.C. § 811(c). Section 554 of the APA in turn cross-references section 557 which provides that "[o]n appeal from or review of [an] initial decision, the agency has *all the powers which it would have in making the initial decision*." 5 U.S.C. § 557(b) (emphasis added); *see also Kay v. FCC*, 396 F.3d 1184, 1189 (D.C. Cir. 2005) ("The law is settled that an agency is not required to adopt the credibility determinations of an administrative law judge."); *id.* (agency not in position analogous to appellate court reviewing trial court). We have suggested that findings dependent on "*demeanor* of witnesses" must be "given special weight," *Mathew Enter., Inc. v. NLRB*, 498 F. App'x. 45, 46 (D.C. Cir. 2012) (quoting 2 Richard J. Pierce, Jr., Administrative Law Treatise § 11.2 (5th ed. 2010)) (emphasis added), but demeanor is not at issue here.

condition is unnecessary and, indeed, whether it is so unnecessary as to fail arbitrary and capricious review. The objections of the petitioners break down into the following groups: (1) surveying equipment is not used to mine coal, (2) use of the NPESE must stop if the methane level approaches a level well below its explosive threshold, (3) even while production is ongoing, the NPESE will not come in contact with methane and coal dust, (4) the NPESE has a slight potential for ignition, (5) it is unlikely methane or coal dust will enter the NPESE compartments that contain electrical components, (6) previously approved modification petitions manifest that this condition is unnecessary and (7) the manufacturer's warning about use of NPESE in coal mines was "not probative," Pet'rs' Br. at 61. We address the objections *in seriatim*.

1. Surveying equipment is not used to mine coal

The petitioners argue that the Assistant Secretary failed to appreciate the differences between NPESE and other—riskier—mine equipment. For example, they claim that he failed to account for the fact that the NPESE does not cut coal, that it is peripheral in the mining process and that it does not cause methane to disperse or coal dust to be in suspension. But the Assistant Secretary addressed this argument. He reasoned that "[a]lthough these circumstances . . . might mean that the risk of using non-permissible surveying equipment is *less* than the risk of using other types of non-permissible equipment, nothing in the record convinces me that the circumstances would sufficiently offset the dangers of using" NPESE in high risk areas. Rosebud Order II at 7–8 (emphasis added). Moreover, MSHA has, by regulation, applied its permissibility requirements to equipment other than that which "cuts into coal." Canyon Fuel Order at 41. *See, e.g.*, 30 C.F.R. § 75.500(d) ("*All* . . . electric face equipment which

is taken into or used inby the last crosscut of any coal mine" must be permissible) (emphasis added). The petitioners' contention that the NPESE—although non-permissible—is relatively safe suggests only that this condition is less necessary than others, not that it is arbitrary. In addition, the Assistant Secretary noted that the petitioners used the Twenty Mile consent order, Case No. 2007-MSA-00002 (Dep't of Labor Dec. 5, 2007), as a template for their petition and Twenty Mile included the same condition.

2. Methane detection and shutdown requirement guards against explosions

The petitioners next contend that, because the ALJ imposed a condition that operators cease using NPESE if the methane level reaches a 1% concentration and, because a 5% concentration is the minimum concentration necessary for ignition, the requirement that production cease during NPESE use is arbitrary. The Assistant Secretary amply rebutted this argument. He noted that although the 1% methane concentration condition "provide[s] some protection from the increased risk of a methane ignition posed by using non-permissible equipment . . . [it is] not enough." Rosebud Order I at 35–36. As he explained, the record indicated that methane detectors are not always properly calibrated and also may fail. Moreover, he cited testimony that a "lag time" exists between an increase in methane concentration and its detection. Rosebud Order II at 8. Thus, if there were a "sudden inundation of methane," the methane detector might not register it before an explosive quantity accumulated near the NPESE. *Id.*

3. NPESE will not encounter methane or float coal dust

The petitioners next contend that, as a matter of practice, surveying *generally* does not occur in areas where methane

and coal dust are present and that, even when it does, the ventilation systems will prevent an explosion. First, we note that much of this argument is equivocal.[24] To second-guess the Assistant Secretary on this ground would require us to weigh the evidence *de novo* and usurp MSHA's statutorily conferred authority to determine whether a specific mine hazard—once its existence is conceded—is substantial enough to impose restrictions. *See, e.g.*, *Partington v. Houck*, 723 F.3d 280, 291 (D.C. Cir. 2013) ("we do not substitute our judgment for that of the agency or evaluate *de novo*" its factual findings).

In any event, the Assistant Secretary adequately addressed the objection with a reasoned explanation. First, he observed that the record was ambiguous about whether surveying sometimes occurred in the areas the petitioners claimed to avoid.[25] Moreover, he observed that nothing in the

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[24] *See, e.g.*, Pet'rs' Br. at 44 (there is "*little or no* exposure to either" dust or methane) (emphasis added); *id.* at 45 (in "*most* instances, the surveying equipment will be positioned upwind of the continuous miner and thus not exposed in any way to methane or dust") (emphasis added); *id.* ("surveyors are *generally* upwind of the entry where production is occurring") (emphasis added); *id.* at 46 ("it is clear that the instrument will *not often* be in close proximity downwind of the continuous miner") (emphasis added).

[25] *See* Rosebud Order II at 4 n.2 ("Although initially stating that he did not survey in the entry where the continuous miner is mining, . . . Groff then testified that '*usually* we coordinate ourselves in different entries.' " (emphasis in original)); *id.* at n.3 ("The evidence does not support Rosebud's assertion that surveying is not conducted close to the face. . . . Groff testified that he has taken shots as close as 50 feet from the face."); *id.* at 7 n.4 ("The evidence does not support Rosebud's assertion that surveying equipment is always used in the middle of the entry. . . . [Groff]

ALJ orders "require[d] that the equipment be used" only in the areas identified by the petitioners—*i.e.*, in different mine entries, a sufficient distance from the face or in the middle of mine entries. Canyon Fuel Order at 41–42. Regarding whether surveying often or always occurred upwind of production, the Assistant Secretary noted the same ambiguity, *i.e.*, that the petitioners occasionally surveyed *downwind*. *See id.* at 42–43 n.18 (Canyon Fuel expert "testified that when one surveys in the longwall tailgate return production is 'most always' upstream.") Moreover, the conditions of use did not *require* that surveying equipment be used only outside the designated areas—that the Assistant Secretary was unmoved by the assertion that this would *almost* always be the case was not arbitrary.[26]

Regarding ventilation, the Assistant Secretary noted that MSHA regulations already require ventilation so that it does not "offset the decrease in safety from using" NPESE. Rosebud Order II at 6. In addition, "ventilation systems do not always work effectively and operators do not always comply with ventilation requirements." *Id.* Ventilation is but one of many "redundant safety measures . . . the Mine Act and its standards require" to guard "against ignitions and explosions." *Id.* at 5–6; *see also* Canyon Fuel Order at 40

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acknowledged that he does not always set up in the middle of the entry.").

[26] It is unclear from the record whether the risk of NPESE use is mitigated entirely if its use is limited to, *inter alia*, areas upwind of production or in entries where production is not occurring. The Assistant Secretary did not reach this issue and thus we need not reach it. The petitioners do not argue that it was arbitrary to impose the cessation of production condition in lieu of a condition requiring, for example, that surveyors always remain upwind of production.

("One of the most frequently cited violations is the failure to comply with ventilation requirements."). In addition, even if the ventilation system functioned properly, the Assistant Secretary concluded that it captured only "significant amount[s] of dust and methane"—not all of it. *Id.* Record evidence supports his conclusion. *See id.*at 40 n.14 (citing ALJ hearing transcript).

4. NPESE has low ignition potential

The petitioners also argue that NPESE is unlikely to cause an explosion. *See, e.g.*, Pet'rs' Br. at 52 (although NPESE is not "permissible," it nonetheless "has a very low potential for ignition of methane or coal dust"); *id.* at 53 (NPESE "does not generate heat"). Substantial evidence supports the Assistant Secretary's rejection of this argument.

The Assistant Secretary considered—and rejected—expert testimony on the relative ignition potential of the equipment. For example, he noted that as part of the test for determining whether equipment is permissible, "MSHA layers dust onto components to see if dust will smolder." Canyon Fuel Order at 35. Smoldering corresponds to overheating, which can result in ignition. Granted, record evidence suggested that if there is significant overheating, "components inside the devices would 'likely' fail, the equipment would not function, and there would be no safety hazard." *Id.* But the Assistant Secretary observed that the evidence was equivocal and not supported with test results. There was also testimony indicating that "if there were internal sparking or overheating it would not be detected." *Id.* at 36. The Assistant Secretary further observed that the safety warning contained in the manual indicated that certain equipment "[m]ay ignite explosively." *Id.*

The petitioners supplement their argument about the equipment's relative safety with the observation that it cannot create sparks. *See* Pet'rs' Br. at 63 ("[U]nlike a continuous miner or roofbolter, [NPESE] creates no sparks."). *But see id.* at 53 ("[T]he changing of batteries has a potential for creating sparks."). They argue, therefore, that "dust or methane would necessarily have to enter the instrument" in order for an explosion to occur. *Id*. at 63. But the Assistant Secretary disagreed and record evidence supports his skepticism. For example, Ryder "acknowledged that non-permissible electronic surveying equipment can spark if there is something wrong with the device such as a loose connection." Canyon Fuel Order at 28 n.8. And a MSHA witness "testified that batteries in the equipment can short out and cause an arc." *Id.*

5. Methane and dust will not enter NPESE electrical compartments

Based on their dubious contention that sparking cannot occur, the petitioners argue that ignition can result only if dust or methane gets into the NPESE. *See* Pet'rs' Br. at 63 ("dust or methane would necessarily have to enter the instrument" for ignition to occur). And the petitioners contend that the devices were adequately sealed and that the ALJ-imposed condition requiring updating of equipment sufficiently guarded against degradation of seals. The Assistant Secretary concluded that the record rebutted this claim.

The premise that the devices were well-sealed was based on Ryder's faulty water immersion and dust swab tests. As the Assistant Secretary explained, the test results were performed on equipment different from that the petitioners sought to use. Ryder claimed that the equipment he inspected was substantially similar to the petitioners' but he "did not

take apart" the latter; and Huntley testified that, absent such an examination, it would be difficult to conclude that it was similar. Rosebud Order I at 29. Moreover, even assuming Ryder tested sufficiently similar devices, Huntley testified that it was "suspect" to use water as a surrogate for gas and, in any event, moisture was found in all of the equipment Ryder tested. Rosebud Order I at 30. Although Ryder testified that the water entered only because the seals were degraded, the Assistant Secretary observed that there was no record evidence documenting how long it took a seal to degrade. And, again, the petitioners had the burden of proof. 30 C.F.R. § 44.30(b).

The petitioners argue that, even if dust or methane can enter the electrical compartments, the openings "are sufficiently small in most cases to prevent the escape of flame outside the compartment." Pet'rs' Br. at 58. We once again note the petitioners' equivocal language and also observe that the Assistant Secretary referenced testimony rebutting this contention. *See* Rosebud Order I at 31 ("I credit Huntley's . . . testimony that internal pressures from an ignition could create larger openings.").

6. Other petitions

The petitioners next contend that the Assistant Secretary improperly analogized to other petitions in imposing the condition that coal production cease when surveying occurs in high-risk areas. We need make only two brief observations. First, we question the relevance of this claim. The petitioners contend, for example, that MSHA "permits photography [in high-risk areas] with less extensive requirements than the [NPESE] petitions and permits cutting and welding under less extensive conditions which do not involve cessation of production." Pet'rs' Br. at 60 n.23. But we have no basis on

this record to conclude either that that equipment poses the same (or greater) risk as the NPESE or that the conditions imposed on the use of that equipment, even if not identical, are not nonetheless more stringent. Even if we could reach those conclusions, they do not establish, on their own, that the condition MSHA placed on NPESE is arbitrary. Second, the petitioners apparently encouraged the Assistant Secretary to rely on other petitions such as Twenty Mile. *See* Canyon Fuel Order at 40 ("Canyon Fuel expert witness Hartsog acknowledged . . . reli[ance] on other granted-petitions [sic] for modification of permissibility standards that allow the use of diagnostic and testing equipment in high risk areas as well as the modification in *In re Twentymile Coal Co*."); Rosebud Order I at 39 ("Rosebud mining engineer Cobaugh acknowledged that the Twentymile consent agreement was a template for Rosebud's petitions for modification in this case."). And the Twenty Mile petition *did* involve NPESE. The petitioners now contend that Twenty Mile was "never subjected to the test of litigation and a decision by an impartial ALJ." Pet'rs' Br. at 60. Although accurate, their backtracking does little to establish that the conditions are arbitrary or capricious. The Assistant Secretary's conditions are supported by the record before him and his reference to Twenty Mile was little more than an aside. *See* Rosebud Order I at 39 ("I also note that the same requirement is contained in the Consent Agreement in [Twenty Mile].").

7. <u>Reliance on device warning</u>

The petitioners also argue that the Assistant Secretary improperly relied on the manufacturer's warning inasmuch as neither MSHA nor the manufacturer could explain its basis. The petitioners again overlook that they bear the burden of proof in the modification petition process. *See* 30 C.F.R. § 44.30(b). And, in any event, it was not arbitrary for the

Assistant Secretary to rely on the warning applicable to the very equipment the petitioners sought to use. The manufacturer, after all, "is in the best position to know about the ignition risks of the equipment it manufactures." Rosebud Order I at 34; *see also* Canyon Fuel Order at 37 ("[T]he manufacturers of the equipment are in the best position to evaluate its ignition potential.").

B. FLOAT COAL DUST CONDITION

The petitioners separately argue that the condition prohibiting surveying in high-risk areas when float coal dust is in suspension is arbitrary. It is uncontested that this condition enhances mine safety. What is at issue is whether the Assistant Secretary reasonably concluded that it is necessary. We note, first, that the petitioners' arguments repeat earlier contentions. *See* Pet'rs' Br. at 63 ("[T]here is nothing about use of a surveying instrument that liberates dust or methane."); *id.* ("it creates no sparks"); *id.* at 65 (for explosion to occur "dust must still find its way into the insides of the electronic surveying instrument which is highly unlikely"). Only two contentions require analysis: the condition is unclear and impossible to implement and the condition is self-regulating because surveying becomes impossible at a dust concentration well below an explosive point.

The petitioners rely on the Administrator's statements in his denial of their original petitions that "it is not possible for the petitioner to implement this action item [because] [f]loat coal dust cannot be entirely eliminated during the cutting process of mining. . . . Unless all mining were to cease, float coal dust would be generated." Administrator's Proposed Decision and Order at 6, Parkwood Res. Inc., Docket No. M-2008-054-C (Dep't of Labor Jan. 29, 2010). But, given that

the Assistant Secretary has required coal production to cease while surveying is conducted in the high-risk areas, the petitioners' point is weakened. And we have found no other record support for this argument.[27] Regarding whether the condition is clear enough to be implemented, the Assistant Secretary resolved its vagueness by noting that a "visual determination" suffices to determine if dust is in suspension. Rosebud Order II at 11 n.7.

The petitioners also contend that this condition is unnecessary because it is "self-regulating." Pet'rs' Br. at 63. They claim that "far less than a sufficient amount of dust to be explosive would preclud[e] surveying" by reducing visibility below levels necessary for surveying. *Id.* But the Assistant Secretary reasonably rejected this argument. As he explained, "coal dust can be rapidly placed in suspension . . . [and] even a vigilant surveyor may not have the time to de-energize his instrument before it encounters an explosive concentration of coal dust." Rosebud Order I at 33.

C. VIABLE MECHANICAL SURVEYING EQUIPMENT

The final condition under challenge is that the petitioners must switch to viable mechanical surveying equipment when it becomes commercially available. We first note that it is MSHA's position that the use of NPESE, under the conditions of use imposed by the Assistant Secretary's two orders, is no more dangerous than the use of mechanical surveying

[27] The petitioners argue in the alternative that the prohibition on surveying in high-risk areas while production is ongoing renders this condition redundant. But the record reflects that coal dust can also be placed in suspension from "methane explosions, bumps, fans, roof falls, brushing up against insufficiently rock-dusted float coal dust, and the exhaust from large pieces of equipment." Canyon Fuel Order at 35.

equipment. *See* Rosebud Order I at 44 ("I have found that the [NPESE], including the modifications and additional conditions in the [ALJ's] decision and order, as modified and supplemented by the conditions in this decision and order, will at all times promote the same safety goals as the original standards [allowing mechanical equipment] with no less than the same degree of success."). If that were not so, the modification grant here would be improper. *See S. Ohio Coal Co.*, 928 F.2d at 1202 (modification must "promote the same safety goals as the original standard with no less than the same degree of success."). And the petitioners contend that NPESE (with the conditions of use) is not only as safe as, but *safer* than, mechanical surveying equipment.

The petitioners make two arguments to suggest that mechanical surveying equipment, even when "viable," is less safe than NPESE. First, they argue that surveying with NPESE is faster and thus surveyors are exposed to the dangers of mines for less time than they would be with mechanical equipment. But the Assistant Secretary observed that this assertion was unsupported by data, *see* Rosebud Order I at 45 n.25 ("The evidence concerning the increased likelihood of injury from the asserted increase in exposure time is general and not quantified and does not establish that the increase in exposure time would result in anything more than an insubstantial decrease in safety."), and it did not consider "the additional time needed to comply with the conditions for use" of NPESE, *id.*

The petitioners also assert that even "viable" mechanical surveying equipment will have inferior accuracy. The record supports this assertion, *compare* Rosebud Order I at 44 n.23 (suggesting "1 foot-in-10,000 feet accuracy levels" viable) *with* Petition for Modification Stipulations ¶ 21, In re Rosebud Mining Co., Docket Nos. 2010-MSA-1, 2011-MSA-

2, -11, -12 (reflecting NPESE achieved 1 foot in 81,507 feet accuracy), but, even assuming the accuracy gap is more than *de minimis*, we have no way to measure its impact on mine safety. *See* Rosebud Order I at 44 n.23 (expert testimony reflecting that "there are no safety issues when surveying equipment achieves 1 foot-in-10,000 feet accuracy levels."). Thus, whatever accuracy gain is made by using NPESE, it is not plain that it improves mine safety more than would viable mechanical equipment.

Finally, the Assistant Secretary identified a mine safety risk from the use of NPESE that would not exist with viable mechanical surveying equipment—the use of "MSHA's limited resources . . . spent ensuring compliance with the terms and conditions" of use. Rosebud Order I at 45. Because MSHA must assess what effect modifications will have on "overall mine safety," *S. Ohio Coal Co.*, 928 F.2d at 1202, the preservation of finite resources for use in ensuring compliance with *other* standards is a reasonable basis upon which to include this condition.

For the foregoing reasons, we deny the petitions for review.

So ordered.