

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 13, 2010

Decided October 26, 2010

No. 09-1014

INTERNATIONAL UNION,
UNITED MINE WORKERS OF AMERICA,
PETITIONER

v.

MINE SAFETY AND HEALTH ADMINISTRATION, ET AL.,
RESPONDENTS

NATIONAL MINING ASSOCIATION,
INTERVENOR

On Petition for Review of a Final Rule
of the Federal Mine Safety & Health Administration

Arthur Traynor argued the cause for petitioner. With him
on the briefs were *Grant Crandall* and *Judith Rivlin*.

Edward Waldman, Attorney, U.S. Department of Labor,
argued the cause for respondents. With him on the brief was *W.*
Christian Schumann, Counsel.

Before: GINSBURG, ROGERS and GARLAND, *Circuit Judges*.

Opinion for the Court by *Circuit Judge* ROGERS.

ROGERS, *Circuit Judge*: Congress has addressed the problems of miner safety on various occasions, the questions here arising with respect to the Secretary of Labor's response to Congress' focus on refuge alternatives for underground coal mines. The International Union, United Mine Workers of America ("UMWA") petitions for review of the Refuge Alternatives for Underground Coal Mines, 73 Fed. Reg. 80,656 (Dec. 31, 2008) (codified at 30 C.F.R. pts. 7, 75) ("Final Rule"). The UMWA contends the provision on training violates statutory standards and, like the refuge volume provision, is arbitrary and capricious.

We grant the petition with respect to the training requirement for miners and remand the Final Rule for the Mine Safety and Health Administration ("MSHA"), acting on behalf of the Secretary, to explain the basis for requiring "hands-on" training only annually rather than quarterly. Although the training provision is, as statutorily required, "consistent with" the recommendations of the National Institute of Occupational Safety and Health ("NIOSH"), these requirements are nonetheless arbitrary and capricious because MSHA has not explained the basis for them other than to state it relied upon its "knowledge and expertise." A conclusory statement is inadequate when expert evidence in the rulemaking record indicated why quarterly hands-on training was necessary and MSHA itself had identified problems of skill degradation.

We deny the petition with respect to the provision on minimum refuge volume per miner. The final rule was a logical outgrowth of the proposed rule: MSHA gave interested parties sufficient notice and opportunity for comment. The provision also is neither arbitrary nor capricious.

I.

After several high-profile mine accidents involving multiple fatalities, Congress enacted the Mine Improvement and New Emergency Response Act of 2006, Pub. L. No. 109-236, 120 Stat. 493 (2006) (partially codified in scattered sections of 29 and 30 U.S.C.) (“MINER Act”), and instructed the Secretary to consider expanded use of refuge alternatives in which trapped miners can seek shelter. Section 6 created the Office of Mine Safety and Health within NIOSH to enhance the development of technology and to assist with research, through grants and contractual arrangements with educational institutions and qualifying private parties. 120 Stat. at 498-99 (codified at 29 U.S.C. § 671(h)). Section 13 designated NIOSH to provide for the conduct of research, including field tests, and to report within eighteen months to Congress and to the Secretaries of Labor and Health and Human Services on research regarding “the utility, practicality, survivability, and cost of various refuge alternatives in an underground coal mine environment, including commercially-available portable refuge chambers.” 120 Stat. at 504 (uncodified). The Secretary of Labor was to respond to Congress on “the actions, if any, that [she] intends to take *based upon* the [NIOSH] report, including proposing regulatory changes, and the reasons for such actions.” *Id.* (emphasis added).

In December 2007, Congress directed the Secretary to “propose regulations . . . *consistent with* the recommendations of the [NIOSH Report] . . . requiring rescue chambers, or facilities that afford at least the same measure of protection” not later than June 15, 2008, and to “finalize the regulations not later than December 31, 2008.” Consolidated Appropriations Act, 2008, Pub. L. No. 110-161, § 112(b), 121 Stat. 1844, 2168 (2007) (“2008 Appropriations Act”) (emphasis added). On June 16, 2008, MSHA published a notice of proposed rulemaking

(“NPRM”), 73 Fed. Reg. 34,140, and, following the receipt of comments, promulgated the Final Rule on December 31, 2008. The UMWA petitions for review of the miner training and refuge volume provisions in the Final Rule.

Training. The NIOSH Report to Congress made a series of recommendations on training miners on the use of refuge alternatives. See Office of Mine Safety & Health, NIOSH, Research Report on Refuge Alternatives for Underground Coal Mines at 15-16 (Dec. 2007) (“NIOSH Report”). It separately addressed, in research, motor task training on the operation of a refuge chamber, decision-making training on when to use a refuge chamber, and expectations training to help miners attain realistic expectations about what it would be like to spend four days in a refuge chamber. See Issues Regarding Refuge Chamber Training, NIOSH, Docket No. BKG-25 (“NIOSH Research”). Most notably, the Report stated that “NIOSH research indicates that motor task training, i.e., *how to use* refuge alternatives, should be given quarterly, possibly in conjunction with the mandatory mine evacuation training and drills.” NIOSH Report at 15. The NIOSH Report also recommended that decision-making training and expectations training be given at the same time as the motor task training. *Id.* The referenced research stated regarding motor task training that, by contrast with the 18 sequential steps to activate and maintain a refuge chamber, “NIOSH testing has shown that without repeated hands-on practice, miners quickly forget how to physically perform [even the 6] steps [to donning a self-contained self-rescuer [“SCSR”]].” NIOSH Research at 1. One experiment found that a year after miners had demonstrated proficiency only 10% of those sampled remained proficient without additional training. By contrast, 70% of miners who completed hands-on training quarterly remained proficient. The NIOSH Research concluded that “there is little or no reason to believe the operation of a refuge chamber is in any way exempt

from the principles that have held true for literally hundreds of motor tasks that have been studied since the turn of the 20th century: people learn by doing, and tend to forget over time unless they practice.” *Id.* Noting that “the optimum intervals for retraining on a refuge chamber are not known,” NIOSH researchers suggested that a “reasonable approach . . . would be to integrate instruction on the refuge chamber into the emergency mine evacuation training and drills that are mandated to be held quarterly.” *Id.* at 2. NIOSH researchers also warned with regard to motor task training that “[t]rainers ought not to rely solely on verbal or printed instructions, videos, etc.” *Id.* at 1.

MSHA proposed quarterly drills and annual training. NPRM, 73 Fed. Reg. at 34,171; *see id.* at 34,156-57. The proposed quarterly drills required locating refuge alternatives and stored SCSRs, and “reviewing the checklist” and manufacturer-provided information on constructing, activating, and using refuge alternatives. *Id.* at 34,171. The annual training included hands-on motor task training in donning SCSRs in a real or simulated smoke-filled environment, and constructing and activating a refuge chamber in a simulated emergency situation; decision-making training “emphasiz[ing] that miners first try to evacuate the mine and that refuge alternatives are a haven of last resort when escape is impossible”; and expectations training in exposing miners to the expected heat and humidity conditions in a refuge chamber, an element considered “essential to reduc[ing] the level of panic and anxiety associated with the use of refuge alternatives.” *Id.* at 34,156-57.

In comments the UMWA objected that the proposed training provision was inconsistent with the NIOSH Report, noting that the proposed “expectations training” is to be performed annually instead of quarterly and that there was no requirement for hands-on training to be conducted with an actual

or model refuge chamber. The UMWA stated that “[t]o adequately protect miners in the post-accident situation, the training protocol must require hands-on training at least every 90 days.” UMWA Comments, Docket No. COMM-11, at 15 (Aug. 15, 2008). It noted MSHA’s reference in the preamble to data from studies in 1990-93 in which researchers from the U.S. Bureau of Mines, the University of Kentucky, and MSHA measured skills degradation; for example, one study had found proficiency dropped about 80% in follow-up evaluations conducted about 90 days after training. *Id.* at 14 (quoting NPRM, 73 Fed. Reg. at 34,156/2). Yet, the UMWA concluded, in the proposed rule MSHA “does not appear to be taking that approach.” *Id.* at 15.

NIOSH did not comment specifically on the proposed training provision, observing only that the proposed rule is consistent with NIOSH research findings presented to Congress in 2007, “if appropriate training is provided.” NIOSH Comments, Docket No. COMM-20, at 2 (Aug. 18, 2008).

The Final Rule did not differ substantively from the proposal on training for miners. *See* 30 C.F.R. §§ 75.1504(b) (“Quarterly instructions review”) & (c) (“Annual expectations training”), 73 Fed. Reg. at 80,698.

Refuge Volume. The NIOSH Report recommended providing at least 15 square feet of unrestricted floor space and at least 85 cubic feet of unrestricted volume per miner in the refuge alternatives to enable miners to perform basic functions. *See* NIOSH Report at 7. However, the Report advised that “[t]he values listed . . . should not be considered as absolute, but rather as reasonable starting points for specifications.” *Id.* at 5. Beyond noting that “it may be impractical to implement viable refuge alternatives in the few mines that operate in very low coal, e.g. less than 36 inches,” *id.* at 4, the NIOSH Report did

not include specific recommendations on how to tailor volume in these low-height mines.

MSHA proposed that a refuge chamber provide 60 cubic feet per miner, including 15 square feet of floor space. *See* NPRM, 73 Fed. Reg. at 34,146. It also noted the problem of low-height mines, explaining that “[f]or mines with lower heights, the 60 cubic feet of space may need to be attained by increasing the length or floor area.” *Id.* The NPRM noted the NIOSH recommendation of 85/15. MSHA generally “solicit[ed] comments on these minimum space and volume requirements,” instructing that “[c]omments should be specific, including alternatives, rationale, safety benefits to miners, technological and economic feasibility, and supporting data.” *Id.* MSHA also specifically “solicit[ed] comment on these proposed values for floor space and volume, particularly in low mining heights,” *id.* at 34,157, with the same instructions about comments.

The UMWA commented that 60 cubic feet was inadequate, explaining that it was “always the intent [of Congress] to provide not only the necessary protections for miners to sustain life while they are inside a chamber/shelter, but to also allow miners to be comfortable while awaiting rescue.” UMWA Comments at 9. Such adequate volume was important, the UMWA emphasized, to protect miners’ mental stability while trapped for up to 96 hours; it pointed to testimony at congressional hearings recounting experiences of trapped miners and how they survived physically and mentally in confined quarters while awaiting rescue. The UMWA also noted that the reduced space would subject miners to greater risk of CO² exposure and/or excessive heat within the chamber. In UMWA’s view, the nearly 30% reduction from the NIOSH recommendation was without justification and “does not make sense.” *Id.* at 10. In “urg[ing] MSHA to adopt the 85 cubic foot recommendation of NIOSH to

all refuges,” *id.*, UMW stated that it would support using more than one chamber to accommodate the space needed.

NIOSH, in turn, explained in comments on the proposed rule that it had based its overall volume recommendation on “published research conducted under the old civil defense program,” pertaining to nuclear fallout shelters for families to be used for two weeks or more, and acknowledged that those findings are “difficult to apply . . . directly to mining applications.” NIOSH Comments at 2. In the absence of new information from other research studies, NIOSH stated it supported MSHA’s proposal of 60 cubic feet.

The Final Rule adopted the proposed 60 cubic feet per miner for refuge chambers and also included a sliding scale based on the height of each mine allowing as little as 30 cubic feet for refuge chambers in mines with heights ranging from 36 inches or less to 54 inches. 30 C.F.R. §§ 7.505(a)(1), 75.1506(b)(1); 73 Fed. Reg. at 80,695, 80,698.

II.

The court reviews an agency’s interpretation of a statute that Congress has assigned the agency to implement under the familiar two-step analysis of *Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837, 842-44 (1984). In step one, the court examines the statute *de novo*, and “if the intent of Congress is clear,” then the court’s task is at an end. *Id.* at 842-43. If, however, the statute is ambiguous, then in step two the court must defer to the agency’s interpretation unless it is “manifestly contrary to the statute.” *Id.* at 844. Even where an agency’s “construction satisfies *Chevron*, [the court] still must ensure that [the agency’s] action is not otherwise arbitrary and capricious.” *Nat’l Ass’n of Clean Air Agencies v. EPA*, 489 F.3d 1221, 1228 (D.C. Cir. 2007); see 5 U.S.C. § 706. The agency must have provided a

“rational connection between the facts found and the choice made” and its explanation must not “run[] counter to the evidence before the agency, or [be] so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass’n of the U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (citation and quotation marks omitted).

A.

The UMWA contends that the training provision fails to adhere to the statutory standards in Section 13 of the MINER Act and the 2008 Appropriations Act that, respectively, training be “based upon” and “consistent with” the NIOSH Report’s recommendations with regard to the content and frequency of training. These challenges fail.

The plain text of Section 13 of the MINER Act does not require the Secretary to promulgate regulations “based upon” the NIOSH Report to Congress. It provides only that “the Secretary of Labor shall provide a response to [certain congressional committees] containing a description of the actions, *if any*, that the Secretary intends to take based upon the [NIOSH] report, including proposing regulatory changes, and the reasons for such actions.” 120 Stat. at 504 (emphasis added). The UMWA’s reliance on Section 13’s purpose, structure, and legislative history is unavailing. It suggests that Section 13 could only have meaning if it required MSHA to take action because MSHA already had discretionary authority to set safety standards generally and to promulgate regulations for emergency shelters within certain parameters under the Federal Coal Mine Health and Safety Act of 1969, as amended by the Federal Mine Safety and Health Act of 1977 (“Mine Acts”), *see* 30 U.S.C. §§ 811, 875, 957. But Section 13 still has meaning in providing MSHA with a new reference point - the NIOSH Report - to help shape such regulations if MSHA decided they were necessary. The

UMWA further suggests that Section 13 must be viewed consistently with the general safety purposes of the Mine Acts, *see, e.g., United Mine Workers Ass'n v. MSHA*, 823 F.2d 608, 617 (D.C. Cir. 1987), and the emphasis of the MINER Act on the “key role of the [NIOSH] in advancing such technological development,” 152 Cong. Rec. S4619 (2006) (statement of Sen. Enzi); *see* S. Rep. No. 109-365, at 9-10 (2006). But neither of these background principles supports the proposition that Congress intended MSHA to adhere to the NIOSH Report as the only way to promote safety. Contrary to the UMWA’s suggestion, MSHA’s statement in the preamble that the Final Rule implemented the MINER Act simply referred to provisions to improve miner safety, namely, requiring operators to include refuge alternatives in the emergency response plan under Section 2 of the MINER Act, 30 U.S.C. § 876.

By contrast, the plain text of the 2008 Appropriations Act required the Secretary to promulgate regulations “consistent with” the NIOSH Report.¹ Relying on *Nat’l Ass’n of Broadcasters v. FCC*, 569 F.3d 416, 421 (D.C. Cir. 2009), MSHA interprets Section 112(b) to mean that the “consistent with” clause applies only to MSHA’s proposed rules but not to

¹ Section 112(b) of the 2008 Appropriations Act provides:

Not later than June 15, 2008, the Secretary of Labor shall propose regulations pursuant to section 315 of the Federal Coal Mine Health and Safety Act of 1969, *consistent with* the recommendations of the National Institute for Occupational Safety and Health pursuant to section 13 of the MINER Act (Public Law 109-236), requiring rescue chambers, or facilities that afford at least the same measure of protection, in underground coal mines. The Secretary shall finalize the regulations not later than December 31, 2008.

121 Stat. at 2168 (emphasis added).

its final rules, because Congress only included the “consistent with” language in the sentence dealing with proposed rules. However, in *National Association* the court held only that an “omission is intentional where Congress has referred to something in one subsection but not in another”; it said nothing about a requirement stated in a single subsection. The final sentence in Section 112(b) hints of no exception to the “consistent with” requirement in the first sentence. Reading this subsection not to apply to the Final Rule is contrary to the text and structure of the subsection, which encompasses the entire rulemaking process.

However, the court has considered terms like “based upon” and “consistent with” to be ambiguous, prompting analysis under *Chevron* Step Two, 467 U.S. at 843. As the court explained in *Nuclear Energy Inst., Inc. v. EPA*, 373 F.3d 1251, 1270 (D.C. Cir. 2004) (citing *Natural Res. Def. Council, Inc. v. Daley*, 209 F.3d 747, 754 (D.C. Cir. 2000)), the phrase “consistent with” “requires not ‘exact correspondence . . . but only congruity or compatibility.’” *Id.* (quoting *Envtl. Def. Fund, Inc. v. EPA*, 82 F.3d 451, 457 (D.C. Cir. 1996)) (ellipsis in original). In *Nuclear Energy*, the Energy Policy Act required the agency to issue standards “based upon and consistent with the findings and recommendations of the National Academy of Sciences [“NAS”].” *Id.* at 1269. The court held the regulations were not “consistent with” the NAS’s findings because the agency had “rejected NAS’s findings, and then went on to promulgate a dramatically different standard, one that [NAS] had expressly rejected.” *Id.* at 1270. The court concluded that the agency’s action “so completely diverges from any realistic meaning of the [statute] that it cannot survive scrutiny under *Chevron* Step Two.” *Id.* (alteration in original). On the other hand, in *Envtl. Def. Fund*, the court concluded the agency’s incorporation of minor deviations from the statutory standard was reasonable. The rule approved of plans that deviated from the statutory

implementation schedules in view of problems identified by the applicant that caused the delays. The agency had explained this modification was a “practical necessity to accommodate uncontrollable delays.” *Envtl. Def. Fund*, 82 F.3d at 457 (quoting 58 Fed. Reg. at 62,197) (quotation marks omitted). So too in *Sierra Club v. EPA*, 356 F.3d 296, 304-06 (D.C. Cir. 2004), the court concluded that the agency’s determination of ozone air quality attainment was “based on” a photochemical grid model, as required by the statute. The court rejected the suggestion that “based on” means “the sole basis for,” *id.* at 306, but stated that the phrase would not permit a determination that “wholly abandoned the results of a model,” *id.* The court concluded the statute was satisfied because the model was the primary basis and starting point for the attainment demonstration. The states in the Washington, D.C. metropolitan area initially failed to demonstrate ozone air quality attainment under the model, but the agency permissibly “adjusted the model’s extrapolations in light of [its] concerns about the model’s reliability and uncertainty” and determined attainment was successfully demonstrated. *Id.* at 305. Under this precedent, then, MSHA could permissibly adopt changes to the NIOSH recommendations in response to issues raised by commentators or the agency itself, but it could not adopt a provision that is contrary to the NIOSH Report.

The UMWA maintains that MSHA “abandoned” the NIOSH Report “recommendation of quarterly training consisting of both hands-on motor skills component and expectations training.” Pet’r Br. 27. With the exception of quarterly task training in the non-emergency task of proper transportation of the refuge alternatives and components, 30 C.F.R. § 75.1504(b)(9), the UMWA considers the much more limited quarterly training in the Final Rule to “amount[] to nothing more than a paper review of procedures that operators could meet by handing miners a

stack of documents. *See* 30 C.F.R. 75.1504(b)(6) and (8).” Pet’r Br. 27.

The training provision in the Final Rule, 30 C.F.R. § 75.1504, does not abandon training requirements even though it does not provide for quarterly hands-on training; such training is required annually. MSHA’s suggestion that the Final Rule could ignore NIOSH’s recommendations on training because “Congress’ mandate to NIOSH did not extend to training” is not well taken. Resp’t Br. 18. In laying out guidelines for training, NIOSH acted within its statutory mandate under Section 13(a) of the MINER Act to conduct research on the “utility, practicality, survivability, and cost” of alternative refuge chambers, 120 Stat. at 504. NIOSH could reasonably determine that this purpose included research on training, which it “assessed to be critical to the successful use of refuge alternatives,” NIOSH Report at 4.

More persuasively MSHA maintains that the Final Rule did not abandon or supplant the NIOSH training recommendation but accepted it with modification. It views the requirement for annual hands-on training, 30 C.F.R. § 75.1504(c)², as “consistent

² Subsection 75.1504(c), “Annual expectations training,” provides:

Over the course of each year, each miner shall participate in expectations training that includes the following:

- (1) Donning and transferring SCSRs in smoke, simulated smoke, or an equivalent environment.
- (2) Breathing through a realistic SCSR training unit that provides the sensation of SCSR airflow resistance and heat.
- (3) Deployment and use of refuge alternatives similar to those in use at the mine, including –
 - (i) Deployment and operation of component systems;
 - (ii) Instruction on when to use refuge

with” the NIOSH Report because it “diverged from the recommendation only with regard to the frequency of the training.” Resp’t Br. 19. MSHA notes that the NIOSH Report recommended motor task, decision-making skills, and expectations training be required and be given quarterly. However, in comments NIOSH stated that “[t]he proposed rule is consistent with the NIOSH findings as presented in its research report to Congress . . . if appropriate training is provided.” NIOSH Comments at 2. Unlike its comments on refuge volume provision, NIOSH made no specific comment on the differences between its recommendation and the training provision. MSHA suggests it thus “is fair to conclude” that NIOSH would have commented on any differences it perceived to be significant. Resp’t Br. 20.

In the Final Rule MSHA did not exclude hands-on training among the requirements but determined annual training sufficed. Such a modification comes within our precedent interpreting the “consistent with” mandate. It is true that the NIOSH Report stated its “research indicated motor-task training, i.e., how to use refuge alternatives, should be given quarterly,” NIOSH Report at 15, but it did not foreclose the possibility of requiring annual training. *See id.*; *Nuclear Energy Inst.*, 373 F.3d at 1270. And while 30 C.F.R. § 75.1504(c) does not expressly reference the expectations training as described in the NIOSH Research, the preamble to the Final Rule explains that the training provision offers a comprehensive approach for mine evacuation training and drills that includes deploying and using a refuge chamber

alternatives during a mine emergency, emphasizing that it is the last resort when escape is impossible.

(4) A miner shall participate in expectations training within one quarter of being employed at the mine.

30 C.F.R. § 75.1504(c); 73 Red. Reg. at 80,698.

under simulated emergency conditions, albeit not for four days, *see* 73 Fed. Reg. at 80,680.

The training provision is nonetheless arbitrary and capricious because, as the UMWA contends, it defies the expert record evidence and is unexplained. MSHA has not explained the basis for rejecting quarterly hands-on motor skills, decision-making, and expectations training, other than to state it relied upon its “knowledge and expertise,” *id.* at 80,681. It does not identify what this knowledge and expertise is, nor point to a study or comparison of non-hands-on training. Its conclusory statement is unsupported by the rulemaking record. The NIOSH Report and Research emphasized the importance of quarterly hands-on training, referencing, for example, a NIOSH study that found that after 90 days miners’ ability to accomplish a six-step process for donning SCSRs had severely deteriorated, a problem that would be more severe in the case of the eighteen-step process needed for operation of refuge alternatives, *see* NIOSH Research at 1. NIOSH warned that “[t]rainers ought not to rely solely on verbal or printed instructions, videos, etc.” *Id.* In the Final Rule MSHA did not permit trainers to rely “solely” on such materials, but while acknowledging “problems related to skill degradation in emergency evacuations of mines,” 73 Fed. Reg. at 80,680, it offered no analysis for its conclusion that such problems were adequately addressed with annual hands-on motor task training. Similarly, MSHA provides no explanation for concluding the needs for decision-making and expectations training as described in the NIOSH Research are otherwise met by annual training.

MSHA points to no comments advocating against the quarterly hands-on standard. The preamble to the Final Rule noted only that while some commentators opposed training or wanted to limit the type of training, “some expressed concern that all aspects of deploying and maintaining a refuge alternative

be covered during hands-on training and that this hands-on training should occur every 90 days,” *id.* MSHA did not resolve these commentators’ objections but, in the next sentence of the preamble simply repeated its view, based on its knowledge and experience, that “expectations training” would be helpful. MSHA’s failure to address these comments, or at best its attempt to address them in a conclusory manner, is fatal to its defense of the training provision. See *AT&T Wireless Servs., Inc. v. FCC*, 270 F.3d 959, 968 (D.C. Cir. 2001). *Nat’l Mining Ass’n v. MSHA*, 116 F.3d 520 (D.C. Cir. 1997), on which MSHA relies for the proposition that a rule may be supported solely by the agency’s expertise, does not absolve MSHA from providing a reasoned explanation for its decision only to require annual hands-on training. In that case the Secretary provided a “reasoned explanation” by explaining *what* the “[a]gency experience” was and *how* it informed the determination. *Id.* at 546-47. The Final Rule does neither. And while at oral argument counsel for MSHA attempted to rectify this deficiency by explaining MSHA’s determination, when Congress has delegated “a determination of policy or judgment . . . [to] the agency alone,” *SEC v. Chenery Corp.*, 318 U.S. 80, 88 (1943), “the courts may not accept appellate counsel’s post hoc rationalizations for agency action,” *State Farm*, 463 U.S. at 50. Removing from the preamble the expert evidence clarifying the type of training required, while retaining the conclusion that frequent and effective training is necessary, does not absolve MSHA from the obligation to explain its reasoning for rejecting such evidence. “Conclusory explanations for matters involving a central factual dispute where there is considerable evidence in conflict do not suffice to meet the deferential standards of our review.” *AT&T Wireless Servs.*, 270 F.3d at 968.

Accordingly, we remand but do not vacate the Final Rule for MSHA to provide an explanation of the training provision, see *Allied-Signal, Inc. v. U.S. Nuclear Regulatory Comm’n*, 988 F.2d

146, 150 (D.C. Cir. 1993), or, absent record evidence to support MSHA's conclusion, to reopen the record, and afford interested parties an opportunity to comment, *see Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 242 (D.C. Cir. 2008).

B.

The UMWA challenges the refuge volume requirement as arbitrary and capricious on several grounds.³ It contends the requirement is not a logical outgrowth of the proposed rule, specifically maintaining that it was not afforded an opportunity to submit comments regarding the mental well-being of miners in "coffin-sized spaces," or about "larger persons," i.e., "a mildly obese miner," or the ability to perform basic survival tasks.

A final rule is a logical outgrowth of the proposed rule "only if interested parties should not have anticipated that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period." *Int'l Union, United Mine Workers of Am. v. MSHA*, 407 F.3d 1250, 1259 (D.C. Cir. 2005) (internal quotations omitted). However, "a final rule will be deemed to be the logical outgrowth of a proposed rule if a new round of notice and comment would not provide commentators with their first occasion to offer new and different criticisms which the agency might find convincing." *Fertilizer Inst. v. EPA*, 935 F.2d 1303, 1311 (D.C. Cir. 1991) (citation and internal quotation marks omitted). Notice of the agency's intention is crucial to "ensure that agency regulations are tested via exposure to diverse public comment, . . . to ensure fairness to affected parties, and . . . to give affected parties an opportunity to develop evidence in the

³ Acknowledging in its reply brief that NIOSH's volume recommendation was qualified, the UMWA concedes that its statutory objections based on Section 13 of the MINER Act and the 2008 Appropriations Act are no longer viable.

record to support their objections to the rule and thereby enhance the quality of judicial review.” *Int’l Union*, 407 F.3d at 1259.

Thus, in *Int’l Union*, 407 F.3d at 1259, the court held that a proposed rule providing for a minimum air velocity did not put parties on notice that the maximum air velocity might be regulated. In *Shell Oil Co. v. EPA*, 950 F.2d 741, 751-52 (D.C. Cir. 1991), the court held that there was no logical outgrowth where there was “a marked shift in emphasis between the proposed regulations and the final rules” because the listing of hazardous waste went from a “largely supplementary function” to having a “heavy emphasis” in the regulatory scheme. By contrast, in *Nat’l Mining Ass’n v. MSHA*, 512 F.3d 696, 699 (D.C. Cir. 2008), where the proposed rule requiring that “rescue devices be provided for each miner in both the primary and the alternative escapeways” left open the questions of where the devices would be stored, how they would be available to miners, and whether one common cache of devices would be sufficient where escapeways were proximate, the court held that the rule providing for a hardened room cache between the escapeways was a “logical outgrowth” of the proposal.

The proposed rule identified the potential problem with attaining 60 cubic feet of space per miner, explaining that “for mines with lower heights, the 60 cubic feet of space may need to be attained by increasing the length or floor area,” 73 Fed. Reg. at 34,146. The Final Rule dealt with the problem by reducing the volume to as little as 30 cubic feet per miner where mine heights are 36 inches or less, 30 C.F.R. § 75.1506(b)(1). The UMW contends that the proposed rule contained “[t]he explicit assurance . . . that any problem presented by lower mine heights would be addressed by increasing the length or floor area of the refuge chamber . . . not . . . through further reduction in the volume requirement.” Pet’r Br. 34. However, this overlooks MSHA’s statement that “achieving the volume per mine in

refuge alternatives for low coal mines could be problematic,” 73 Fed. Reg. at 34,157, and its specific call for comments on the proposed floor space and volume requirements in low mining heights, *see id.* MSHA was free to adopt a different solution in the Final Rule, as long as it gave interested parties fair notice and an opportunity to respond. *See Crawford v. FCC*, 417 F.3d 1289, 1295 (D.C. Cir. 2005).

The UMWA “does not suggest that it lacked adequate notice that the Secretary in her [Final] Rule may have further reduced the proposed rule’s 60 cubic feet volume requirement,” but rather emphasizes that MSHA’s reduction of ceiling heights in low mining areas without increasing the floor space presents a logical outgrowth problem. Reply Br. 30. The UMWA views the change as of the more extreme kind in *Int’l Union*, 407 F.3d at 1259, maintaining that MSHA, in “slash[ing] in half” the volume requirement, Reply Br. 30, flipped the potential solution entirely. But the court has held “a final rule represents a logical outgrowth where the NPRM expressly asked for comments on a particular issue or otherwise made clear that the agency was contemplating a particular change.” *CSX Transp., Inc. v. STB*, 584 F.3d 1076, 1081 (D.C. Cir. 2009); *see also City of Portland, Or. v. EPA*, 507 F.3d 706, 715 (D.C. Cir. 2007). In some instances, the agency had included specific questions in the NPRM; in *City of Portland*, 507 F.3d at 715, the court concluded it was foreseeable the final rule might require covering open reservoirs or treating them for *Cryptosporidium* because the proposed rule asked the commentators to address questions about the feasibility of treating uncovered reservoirs rather than covering them and whether there was an increased risk of *Cryptosporidium* in open reservoirs. Here MSHA’s proposed rule identified the problem of low height mines and specifically solicited detailed comments on it.

The UMWA also fails to show that it was prejudiced. *See* 5 U.S.C. § 706; *Owner-Operator Indep. Drivers Ass’n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 202 (D.C. Cir. 2007). In commenting on the proposed rule, the UMWA explicitly or implicitly conveyed its views in opposition to the proposed reduction in refuge volume. It stated, in opposing the reduction from 85 to 60 cubic feet, that 85 cubic feet should be the minimum for “all refuges.” UMWA Comments at 10, 25. Additionally, it addressed the miners’ mental well-being and the size of miners, urging MSHA to require refuges large enough to “provide comfort” for all miners, regardless of circumstances. Its position was that “miners at low coal mines deserve the same protections as those working in high seams.” *Id.* at 13. It also cited the risks of elevated CO² exposure and increased temperatures. *Id.* at 10. On appeal UMWA points to no new evidence that it would have submitted in comments. *See Fertilizer Inst.*, 935 F.2d at 1311; *see also Owner-Operator Indep. Drivers*, 494 F.3d at 202. The UMWA states only that it would have argued that the space was so small that it would be infeasible for miners to perform basic life functions in such a small space; that the openings might have been too small for larger miners to gain entry; and that the rule could have provided for more refuge alternatives to address fears that overlarge refuges would be unwieldy, instead of reducing the volume per miner. These arguments were encompassed in its comments on miner comfort and well-being.

Neither can the UMWA show that the refuge volume provision is arbitrary and capricious. It contends MSHA failed adequately to explain any connection between its findings of fact with regard to chamber volume and the choice it made of 60 cubic feet instead of the 85 cubic feet recommended in the NIOSH Report. It also contends MSHA failed adequately to explain its further reduction based on mine height in view of its suggestion in the NPRM that for mines with lower heights, the

60 cubic feet of space may need to be attained by increasing the length or floor area, *see* 73 Fed. Reg. at 34,146. It urges that the result is “so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *State Farm*, 463 U.S. at 43. It notes that the preamble to the Final Rule states that “[a]dequate space is needed to accommodate larger than average persons” and sufficient space is needed to “conduct necessary activities.” 73 Fed. Reg. at 80,665.

MSHA responds persuasively that the Secretary adopted the volume range as a “policy determination,” Resp’t Br. 29, to “accommodate commenters’ concerns regarding the ability to maneuver, deploy, or use larger units in mines with low seam heights,” 73 Fed. Reg. at 80,665. The preamble to the Final Rule references comments (such as the UMW’s) urging adoption of 85 cubic feet, the NIOSH comment supporting the 60 cubic feet in the proposed rule, and comments stating that the proposed space and volume requirements were excessive in an emergency because persons could survive with less space; that larger refuge alternatives were difficult to transport or may not be feasible in all seam heights; that floor space per person is the critical measurement, not volume; and that less space was needed because the number of persons to be accommodated would be less than half due to overlapping crews. *See id.*

The UMW, suggesting that MSHA’s problems with low seam “heights” could refer more directly to the problem of moving taller chambers in low-ceilings, is incorrect in stating that the rulemaking record is devoid of comments indicating that refuge alternatives with wider floor areas would be difficult to maneuver in low-seam mines. MSHA’s supplemental filing of the rulemaking record at the court’s request includes comments presented, for example, by Jack Kennedy Metal Products and Buildings, Inc., that a unit with a height of 5.5 feet and width of 8 feet would require a length of 27 feet which “cannot be easily

towed around a corner with typical mine equipment” and that such regulations would result in “the chambers that offer the best protection, that is, hard chambers, . . . be[ing] eliminated.”⁴ Similarly, the Superintendent of Dana Mining Company LLC’s Prime No. 1 Mine located in West Virginia commented that “[f]or mines with approximately 40 inches or less of height, it will become impossible to install a twenty (20) person rigid shelter to meet the square footage requirement of the proposed law and be able to advance the unit as the section advances, much less get it installed initially”.⁵ Other comments suggested, moreover, that the reduced volume would be sufficient for the miners to perform necessary functions for at least 96 hours, citing United States military requirements and mine requirements elsewhere; that 15 cubic feet was consistent with international standards; and that a literature review supported a 30 cubic foot standard.⁶ See 73 Fed. Reg. at 80,665. Absent comments

⁴ Comments of Bill Kennedy, President, CEO, Jack Kennedy Metal Products and Buildings, Inc., Docket No. COMM-1, at 5 (July 17, 2008) (“Bill Kennedy Comments”).

⁵ Comments of Steve Polce, Superintendent, Dana Mining Company LLC, Docket No. COMM-13, at 2 (Aug. 15, 2008).

⁶ See Bill Kennedy Comments at 5 (noting reduced volume is “in line with international standards”); Comments of Randall Harris, Engineering Advisor, West Virginia Office of Miners Health, Safety and Training, Docket No. COMM-4, at 35-37, 69-71 (Aug. 1, 2008) (citing U.S. Department of Defense Human Engineering Manual and an example of mine shelters for proposition that smaller volumes are sufficient); Comments of Ralph Sanich, Manager, Health and Safety, Interwest Mining Company, Docket No. COMM-8, at 4 (Aug. 13, 2008) (providing requirements from a regulation adopting another country’s standard and relying on a report by Dr. Joel Haight, a specialist in human factors engineering, which found 30 cubic feet to be sufficient); Comments of Tony Bumbico, Vice President of Safety, Arch Coal, Inc., Docket No. COMM-12, at 5 (Aug. 15, 2008) (citing,

beyond the UMWA's about a further reduction in volume or the alternative of having more smaller refuge alternatives, MSHA made a rational choice based on the record to reduce the volume requirement in these low-height mines.

Accordingly, we grant the petition in part and we deny the petition in part.

for example, the U.S. Navy program on disabled submarines and survival considerations); Comments of Bruce Watzman, National Mining Association, Docket No. COMM-17, at 5 (Aug. 18, 2008) (appending report by Dr. Joel Haight); Comments of John M. Gallick, Vice President Safety and Health, Foundation Coal Corporation, Docket No. COMM-21, at 2 (Aug. 18, 2008) (citing another country's standard of 6.4 square feet of floor space with no volume requirement); Comments of Chris Hamilton, West Virginia Coal Association, Docket No. COMM-33, at 7-8 (discussing sufficiency another country's lower volume standard).