



United States of America
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
1120 20th Street, N.W., Ninth Floor
Washington, DC 20036-3457

SECRETARY OF LABOR,

Complainant,

v.

COOPER TIRE & RUBBER COMPANY,

Respondent.

OSHRC Docket No. 11-1588

FINAL ORDER

The parties have submitted a settlement agreement for approval in this case pursuant to Commission Rule 100, 29 C.F.R. § 2200.100, and a joint motion to dismiss. Having examined the agreement and noted the absence of any objection to the posted agreement by any affected employee pursuant to Commission Rule 7(g), 29 C.F.R. § 2200.7(g), the Commission approves the agreement. The Secretary has withdrawn his petition for discretionary review. Since no one has objected to this withdrawal and the parties seek dismissal of the case, the case is hereby DISMISSED.

SO ORDERED.

BY DIRECTION OF THE COMMISSION

Dated: January 7, 2016

/s/ _____
John X. Cerveney
Executive

Secretary



UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION

THOMAS E. PEREZ, Secretary of Labor,
United States Department of Labor,
Complainant,

v.

COOPER TIRE & RUBBER COMPANY,
Respondent.

OSHRC DOCKET No. 11-1588

DECISION AND ORDER

COUNSEL: M. Patricia Smith, Solicitor of Labor, Stanley E. Keen, Regional Solicitor, Christopher D. Helms, Counsel, Angela F. Donaldson, Senior Trial Attorney, Rolesia B. Dancy, Senior Trial Attorney, for Complainant.

Jonathan L. Snare, Esq., Jason Mills, Esq., Dennis J. Morikawa, Esq., Emily Bieber, Esq., Brandon J. Brigham, Esq., Morgan, Lewis & Bockius LLP, for Respondent.

JUDGE: John B. Gatto.

INTRODUCTION

The above-styled action was tried before the Court pursuant to a complaint filed by Thomas E. Perez, Secretary of Labor, United States Department of Labor (the Secretary), against Cooper Tire & Rubber Company (Cooper Tire) under Commission Rule 34(a),¹ “to affirm the Citations and Notifications of Penalty” issued to Cooper Tire on June 3, 2011, pursuant to section 10(c) of the Occupational Safety and Health Act of 1970 (the Act)² “and the Safety and Health Regulations promulgated thereunder.”³ (Compl. p. 1.) The Commission has jurisdiction

¹ See 29 C.F.R. § 2200.34(a).

² See 29 U.S.C. § 659(c); 29 U.S.C. §§ 651–678.

³ See 29 U.S.C. § 654(a)(2) (each employer shall comply with occupational safety and health standards promulgated under this chapter).

of this action pursuant to section 10(c) of the Act.⁴ The Secretary's complaint incorporated four citations issued to Cooper Tire under the Act by the Jackson Mississippi Area Director of the Department's Occupational Safety and Health Administration (OSHA),⁵ which alleged eleven serious violations, two willful violations, one repeat violation, and two non-serious violations, and proposed penalties totaling \$203,900.00.⁶ (Compl. Exs. A - D.)

Cooper Tire, the second largest tire manufacturer in the United States, operates a facility in Tupelo, Mississippi (Tupelo Plant), where it manufactures automobile and truck tires. Cooper Tire has two other domestic manufacturing facilities in Findlay, Ohio and Texarkana, Arkansas and employs more than 10,000 employees worldwide, including 2000 employees at its Tupelo Plant.⁷ (Resp't's Post-Hr'g Br. n. 1.) The citations were issued under OSHA's Combustible Dust National Emphasis Program (NEP)⁸ and related to the accumulation and handling of carbon black dust at the Tupelo Plant, which, according to the Secretary, was combustible and exposed Cooper Tire's employees to fire⁹ and explosion hazards. (See Compl't's Post-Hr'g Br., p. 1.)

⁴ The parties stipulated that jurisdiction of this action is conferred upon the Commission by § 10(c) of the Act, 29 U.S.C. § 659(c), and that Cooper Tire is an employer engaged in a business affecting commerce within the meaning of § 3(5) of the Act. (Compl. ¶¶ 1, 2; *see also* Tr. 6.)

⁵ The Secretary has authorized OSHA's Area Directors to issue citations and proposed penalties. *See* 29 C.F.R. §§ 1903.14(a) and 1903.15(a).

⁶ Hereinafter, "Tr." refers to the trial transcript, "C-" refers to Complainant's Trial Exhibits, and "R-" refers to Respondent's Trial Exhibits.

⁷ Cooper Tire also operated a facility in Albany, Georgia, which was closed in 2009. (*See* Tr. 773.)

⁸ On October 18, 2007, OSHA initiated its NEP with the issuance of *OSHA Instruction CPL 03-00-006 Combustible Dust National Emphasis Program*. (*See* C-20, p. 3.)

⁹ The parties, witnesses and trial exhibits refer to the term "fire" interchangeably with the term "deflagration." *See, e.g.,* amended Citation 2, Item 1, which cites Cooper Tire for allegedly exposing employees "to combustible dust fire and explosion hazards" due to Cooper Tire's failure to protect the duct work system "with deflagration and explosion protection." (Compl't's Unopposed Mot. Am., p. 2.) For consistency, the Court generally uses the term "fire" in lieu of "deflagration."

The citations resulted from an inspection of the Tupelo Plant between December 7, 2010, and December 16, 2010, by Henry Rust, OSHA's Compliance Safety and Health Officer and the K_{st} values reported on a dust sample collected by Rust (Rust sample), which was analyzed at OSHA's Salt Lake Technical Center (SLTC) in Sandy, Utah, and purportedly showed that the Rust sample was "explosible." According to the Secretary, the K_{st} index reflects the impact of a dust explosion in bar meters per second and measures the potential force of an explosion and that registering on the K_{st} index meant the dust was explosive. (Tr. 532; C-21, p. 2.) Cooper Tire counters that the Secretary has "failed to establish that a carbon black explosion hazard existed at the Tupelo Plant[.]" (Resp't's Post-Hr'g Br., p. 178.)

Based upon pretrial amendments to, and withdrawals of, some of the original citations, as well as a partial settlement reached after trial, most of the issues in this case have been resolved.¹⁰ Still pending before the Court are three disputed issues with proposed penalties totaling \$147,000.00. The first issue involves the Secretary's allegation in amended Citation Number 2, Item 1 that Cooper Tire committed a willful violation of section 5(a)(1)¹¹ of the Act, known as the "General Duty Clause." (*See* Compl't's Unopposed Mot. Am.; Order Granting Compl't's Unopposed Mot. Am.) The second willful issue still unresolved is the Secretary's assertion in Citation Number 2, Item 2, which alleges that Cooper Tire committed a willful violation of 29 C.F.R. § 1910.307(c)(2), the Hazardous (classified) Locations Standard. (*See* Compl. Ex. B, Cit., p. 17.) The last issue involves the Secretary's allegations in Citation Number

¹⁰ After the conclusion of discovery and prior to trial, on November 7, 2013, the Secretary moved to amend the Complaint and Citation Number 2, Item 1 and moved to withdraw Citation 1, Item 1 and Citation 2 Item 1, Instances (a), (b), and (d), which were subsequently granted by the Court on November 14, 2013. (*See* Compl't's Unopposed Mot. Am.; Order Granting Compl't's Unopposed Mot. Am.; Compl't's Unopposed Mot. Withdraw; Order Granting Compl't's Unopposed Mot. Withdraw.) Following the trial, the parties resolved eleven of the remaining items by partial settlement agreement, which was also approved by the Court. (*See* Stipulation of Settlement and Jt. Mot.; Order on Partial Settlement.)

¹¹ *See* 29 U.S.C. § 654(a)(1).

1, Items 2a and 2b that Cooper Tire committed two serious violations of 29 C.F.R. § 1910.22(a), the General Housekeeping Standard. (*See* Compl. Ex. A, Cit., pp. 7-8.)

Thus, as indicated *supra*, after the conclusion of discovery and prior to trial, the Secretary withdrew all alleged violations that addressed “pure” or “virgin” carbon black. (Resp’t’s Post-Hr’g Br., p. 2.) According to Cooper Tire, the case “dramatically changed its focus during the expansive three-year enforcement effort by OSHA from one covering virtually all aspects of the tire manufacturing process in which Cooper Tire transported, received, stored, and conveyed carbon black, to focusing only on the mixing process of pure carbon black and other substances as it entered the ‘master mixture’ phase of production.” (Resp’t’s Post-Hr’g Br., p. 3.) However, “the Secretary refused to withdraw alleged instances related to ‘carbon black mixtures,’ while, at the same time, declining to identify either the specific substances (volatiles and sensitizers) or amounts of such substances, which, when added to the ‘virgin’ carbon black, allegedly created a carbon black [fire]/explosion hazard at the Tupelo Plant.” (*Id.*) “The Secretary’s theory of this case has therefore morphed from one in which the alleged hazard was working with ‘carbon black’ to one involving a discrete but undefined ‘carbon black mixture,’ the relative hazards of which were subject to conflicting expert testimony at trial.” (*Id.*)

After more than three years of litigation, including extensive discovery spanning more than two years, with hundreds of interrogatories and document requests, and twenty-one depositions, the case proceeded to a bench trial on December 2, 2013, which lasted almost two weeks with seventeen witnesses testifying over the course of the trial.¹² Nine were current or former employees of Cooper Tire, four were OSHA representatives,

¹² Although the citations were issued in Tupelo, Mississippi, by agreement of the parties the trial was held in Memphis, Tennessee.

two were from consulting companies engaged by Cooper Tire, and two were the respective experts for the Secretary and Cooper Tire. (Resp't's Post-Hr'g Br., p. 1.)

Pursuant to Fed. R. Civ. P. 52(a), after hearing and carefully considering all the evidence and the arguments of counsel, the Court issues this Decision and Order as its findings of fact and conclusions of law. If any finding is in truth a conclusion of law, or if any conclusion stated is in truth a finding of fact, it shall be deemed so. The Court holds that for the reasons indicated *infra*, the remaining citations and proposed penalties are **VACATED**.

PROCEDURAL ISSUE

A procedural issue arose during the course of the trial regarding the admissibility of certain lay testimony of John Rima, which the Court will address before turning to the merits of the case.¹³ Cooper Tire filed a post-trial motion to strike Rima's opinion testimony and legal conclusions, which, not surprisingly, was opposed by the Secretary.¹⁴ For the reasons indicated *infra*, Cooper Tire's motion to strike is **GRANTED** and the Court **STRIKES** from the record Rima's impermissible opinion testimony, which rested

¹³ Another issue that Cooper Tire focused on at trial was the chain of custody of the Rust sample. Cooper Tire's Counsel cross-examined Rust at length regarding the Rust sample he collected during his inspection of the Tupelo Plant, (Tr. 311-335), but did not move to exclude the SLTC analysis of the sample at trial or post-trial, presumably since any alleged break in the chain of custody "goes to the weight of the evidence, not its admissibility." *United States v. Pena Hinojosa*, 287 F. App'x 318, 319 (5th Cir. 2008) (citations omitted).

¹⁴ In its motion to strike, Cooper Tire also argued that because Rima "had no direct knowledge of what energy was used in the Hartman chamber, and therefore could not testify as a fact witness, both his and the Secretary's expert's testimony on that topic should be stricken from the record." (Resp't's Mot. Strike, p. 4.) The Secretary argues, and the Court agrees, that to the extent that Cooper Tire "improperly attempts to interject a motion to exclude the testimony of [his] expert, Dr. Robert Zalosh," its motion should also be denied. (Compl't's Resp. Resp't's Mot. Strike, p. 6.) Further, any reliance by Dr. Zalosh on Rima's testimony generally goes to the weight not the admissibility of his testimony. *See also, Fair v. Allen*, 669 F.3d 601, 607 (5th Cir. 2012) (the basis of an expert's opinion usually goes to the weight, not the admissibility, of the testimony) (citing *In Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 422 (5th Cir.1987)). Accordingly, Cooper Tire's motion to strike Dr. Zalosh's testimony is **DENIED**.

on his scientific, technical, or specialized knowledge, and his impermissible legal conclusions

Rima, a supervisory chemist at the SLTC, was identified by the Secretary as lay witness in his pretrial statement. (Compl't's Pre-Hr'g Statmnt, p. 12.) Although he was a key witness of the Secretary against Cooper Tire, the Secretary did not attempt to qualify Rima as an expert witness under Rule 702 of the Federal Rules of Evidence. At trial, Cooper Tire repeatedly objected to portions of Rima's testimony arguing that they were impermissible expert opinions since Rima had not been proffered or qualified as an expert.

Cooper Tire argues that Rima's testimony should be stricken because the Secretary "sought to evade the stringent requirements of Federal Rule of Civil Procedure 26 and Federal Rule of Evidence 702 by proffering Rima as a lay witness and then eliciting testimony regarding his 'expert' opinions without providing any of the disclosures required by these rules" or providing "the bases for them." (Resp't's Mot. Strike, p. 3.) Thus, Cooper Tire argues that it "never had the opportunity to evaluate, investigate, or perhaps challenge Mr. Rima's opinions prior to [trial]." (*Id.*) Cooper Tire also argues that the Court should strike Rima's testimony "because he did not base his opinions on personal knowledge as required by Federal Rules of Evidence 602 and 701" and because he "offered legal opinions totally outside the scope of his role as a fact witness." (*Id.*, pp. 1-2, 5.)

In response, the Secretary argues that Cooper Tire did not timely object to the majority of the opinions that it seeks to strike and, thus, waived objection since "a timely objection is necessary to bring to the trial court's attention alleged errors in the conduct of the trial." (Compl't's Resp. Resp't's Mot. Strike, p. 3) (citing *Jenkins v. General Motors Corp.*, 446 F.2d 377, 383 (5th Cir. 1971)). The Secretary also asserts that Cooper Tire "primarily seeks to strike

opinions with which it disagrees, for which it had opportunity to cross-examine and/or present rebuttal.” (*Id.*, p. 1.) The Secretary also claims that Rima “provided testimony based on his personal perception, knowledge and experiences,” which, according to the Secretary, “is permissible under Rule 701 of the Federal Rules of Evidence.” (*Id.*)

The Court finds no merit in the Secretary’s arguments. First, the Court does not agree with the Secretary that Cooper Tire waived its right to object to Rima’s opinion testimony since Cooper Tire repeatedly objected throughout the course of Rima’s testimony at trial. The Court recognizes that “[o]bjections to the admission of evidence must be of such a specific character as to indicate distinctly the grounds upon which the party relies, so as to give the other side full opportunity to obviate them at the time, *if under any circumstances, that can be done.*” (Emphasis added.) *Jenkins*, 446 F.2d 377 at 383 (citing *Noonan v. Caledonia Gold Mining Co.*, 121 U.S. 393, 400 (1887)). Here, however, the Court concludes that Cooper Tire clearly and distinctly indicated the grounds upon which it relied in making the objections. Further, Rule 103 of the Federal Rule of Evidence provides that “[o]nce the court rules definitively on the record — either before or at trial — a party need not renew an objection or offer of proof to preserve a claim of error for appeal.”

More importantly, the Secretary could *not* have eliminated the grounds for objection *under any circumstances* since he failed to designate Rima as an expert in his pretrial statement and a party who fails to disclose an expert may not present that individual’s testimony at trial. *See, e.g., Greenleaf Motor Express, Inc.*, 21 BNA OSHC 1872, 1877 (No. 03-1305, 2007) (*aff’g* Judge’s granting of Secretary’s motion to exclude Greenleaf’s proffered expert testimony based upon untimely disclosure of proposed expert); *see also Jersey Steel Erectors*, 16 BNA OSHC 1162, 1165-66 (No. 90-1307, 1993) (upholding judge’s sanction excluding evidence not revealed

in pre-trial submissions), *aff'd*, 19 F.3d 643 (3d Cir. 1994).

As indicated *infra*, the Court also does not agree with the Secretary that Rima's opinion testimony was permissible under Rule 701 since it was based on scientific, technical, or other specialized knowledge within the scope of Rule 702. Further, "[i]f the witness is relying solely or primarily on experience, then the witness must explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts." Fed. R. Evid. 702 Notes of Advisory Committee on 2000 amendments.¹⁵ Here, the Secretary did not meet that burden since Rima did not sufficiently explain how his experience led to the conclusion reached, why that experience was a sufficient basis for his opinions, and how that experience was reliably applied to the facts.

Rima's Opinion Testimony

An examination of Rima's disputed testimony "reveals that much of it was merely descriptive and summarized the factual information and documents gathered throughout the investigation [] and thus constituted permissible lay testimony."¹⁶ *United States v. Cooks*, 589

¹⁵ Although Advisory Committee Notes are not binding, the United States Supreme Court has frequently relied on them in deciding the appropriate construction of rules of evidence or procedure. *See, e.g., United States v. Young*, 470 U.S. 1, 15n.12. (1985); *United States v. Abel*, 469 U.S. 45, 51 (1984); *Barefoot v. Estelle*, 463 U.S. 880, 905 n.9 (1983); *United States v. Frady*, 456 U.S. 152, 163n.13 (1982); *Delta Air Lines v. August*, 450 U.S. 346, 352 n.8, 356-360 (1981). Thus, the Court gives deference to the Advisory Committee on the Rules of Evidence, which the Court finds particularly appropriate because, as the Reporter for the Advisory Committee has noted, the Notes "were carefully scrutinized by the involved congressional committees and subcommittees, and, except in those instances where superseding changes were made in the Rules by the Congress, must be taken to represent the thinking of that body as the equivalent of a committee report effectively serving as the basis of legislation." Cleary, *Preliminary Notes on Reading the Rules of Evidence*, 57 Neb. L. Rev. 908, 913 (1978).

¹⁶ Rima has a bachelor's degree in chemistry with an emphasis in chemical engineering. (Tr. 589.) He has worked at OSHA for thirty-five years, first as a technician analyzing mostly samples for metal content, later as an analytical chemist, where he continued to provide the metals analyses, but also analyzed silica "and a handful of other things," and finally as a supervisory chemist. (Tr. 587-88.) In the late 1980s, when OSHA decided to set up the SLTC for the analysis of combustible dust, Rima "was brought into the planning stages and the procurement and assembling stages of the setup." (Tr. 587.) After the system was put together, Rima was involved in the initial testing of the equipment and then in the analysis of the samples. (Tr. 587.) He began running combustible dust analysis in the early 1990s, "spending maybe between 10 and 25 percent of [his] time analyzing combustible dust samples. As the Agency knowledge increased, it required more and more time to where [he] was probably spending maybe 75 percent of [his] time running the combustible dust samples." (Tr. 589-90.) As a supervisory chemist for the last six

F.3d 173, 180 (5th Cir. 2009). Nonetheless, the Court agrees with Cooper Tire that significant portions of Rima’s testimony included inadmissible lay opinion testimony since it clearly required scientific, technical, or other specialized knowledge within the scope of Rule 702. As Cooper Tire argues in its motion to strike, and the Court agrees, little doubt exists that Rima’s technical opinions resulted from reasoning “which can only be mastered by specialists in his field.” (*See* Mot. Strike, p. 12.)

In its motion to strike, Cooper Tire argues that “[p]eer-reviewed scientific studies have identified the phenomenon of ‘overdriving’ since low volatility carbon dusts – such as carbon black – can return false positives for explosibility when tested in chambers other than the standard 1-m³ (1000-liter) vessel.” (Mot. Strike, p. 3.) Therefore, Cooper Tire argues that “whether the test method OSHA used on the [Rust] sample can return a false positive is an important issue.” (*Id.*)

Rima testified that “overdriving is in layman’s terms, a false positive result. What that generally means is that when the dust test is performed, the dust burns while the igniter flame is present, but as the igniter flame dies out, so does the burning of the dust.” (Tr. 598.) He stated:

In my opinion it’s virtually impossible to overdrive a sample in the standard configuration Hartman chamber. The gold standard, if you will, K_{st} type dust testing, is the cubic meter chamber, which the recommended minimum ignition energy is 10,000 joules, which means that you’re providing ten joules per liter of test chamber volume. If we were to run our Hartman chamber at maximum energy level for the steel chamber test, the maximum energy we can put in is 2.4 joules. So, being as that test chamber is slightly larger than the liter we’re putting in, at most, a quarter of the energy of what is considered to be the gold standard energy level for testing. ... In our facility, we use a tenth of that energy, so we’re

years at the SLTC, Rima “managed a group of analysts, some of which are involved in the testing of combustible dust” and spent approximately a third of his time “dealing with combustible dust [and] dust management issues.” (Tr. 587.) In his supervisory capacity Rima “provided technical assistance to the analysts . . . reviewed their data and release[s] it to the compliance officer.” (Tr. 587.) Rima is also one of the instructors at the OSHA Training Institute class provided to compliance officers for combustible dust and has participated in every class since it was started in 2007. (Tr. 601-02.) The class provides training on “how to decide where to take the samples from, what the sample strategy should be, how to actually take the samples and pack them or ship them to the laboratory, and then what types of tests to request.” (Tr. 602.)

using 240 millijoules or .24 joules of energy.

(Tr. 598-99.) Rima conceded, however, he had “no direct knowledge as to the amount of energy given out with that ignition source.” (Tr. 599, 683-84.) He also was “not aware of the volatile analysis performed on [the Rust] sample” but opined that “the volatile contents analysis have [no] relevance [in] assessing the combustibility.” (Tr. 603-605.)

Rima also testified regarding his familiarity with OSHA’s NEP and identified a number of different combustibility tests that may be run at the SLTC, including the MIT,¹⁷ MIE,¹⁸ and MEC,¹⁹ which, he stated were “virtually never run.” (Tr. 604-05.) Although this testimony was permissible factual testimony, when Rima was asked if he was aware of any information important to assessing the combustibility of the dust that would be missing without running an MIE, MEC, or MIT, he opined that “[f]or OSHA compliance work, there is no information missing.” (Tr. 605-06.)

When asked if there were any other means of identifying whether dust would be present in sufficient concentrations to pose fire and explosion hazards, Rima opined that “[t]he traditional way to determine if enough dust is present in the work place to present a hazard

¹⁷ The Minimum Ignition Temperature (MIT) is described as the minimum temperature that will ignite a dust cloud. (Tr. 1775-77; Resp’t’s Post-Hr’g Br., p. 40; R-41, p. 20; C-2.) MIT is determined by using the Godbert-Greenwald furnace. Dust is discharged through this furnace at various temperatures. The lowest temperature that ignites the dust is considered to be the MIT. (C-20, p. 42.)

¹⁸ The Minimum Ignition Energy (MIE) is described as the lowest energy ignition source that will ignite a dust cloud at its most easily ignitable concentration. (Resp’t’s Post-Hr’g Br., p. 37; R-41, pp. 11-19; R-59; R-64; R-73; C-44.) The MIE of the sample is determined by suspending the sample in a Hartmann Lucite explosion chamber. To determine the MIE, the energy of the electrical spark used to ignite the dust is varied until the MIE is determined. (C-20, p. 42.)

¹⁹ The Minimum Explosible Concentration (MEC) is described in various terms as: the minimum concentration of a combustible dust suspended in air that will support a fire, the minimum concentration of dust in the air required to fuel a flash fire or dust explosion, or the lower concentration limit of explosibility for the dust. (C-1, p. 10; R-41, p. 19). Similarly, NFPA 654, discussed *infra*, describes it as the minimum concentration of a combustible dust suspended in air, measured in mass per unit volume that will support a fire. (C-42, p. 10.) The MEC of the sample is determined by suspending the sample in a 20-liter explosibility testing chamber and igniting it with a 2500-joule chemical igniter. (C-20, p. 39.)

would be for the compliance officer to make observations and take measurements for the dust that has accumulated at various places in the facility.” (Tr. 606.) “They may also want to acquire a dust sample from inside a dust collector or other type of dust handling equipment *to determine if the dust in that particular equipment* is going to present a hazard. . . . It has been my experience in dealing with a large number of dust explosion cases that the highest probability of an explosion in a workplace is going to involve a dust collector.” (Emphasis added.) (*Id.*)

When asked if he had an understanding of what the K_{st} value or number 22.22 represents, Rima opined that the “ K_{st} value of greater than zero to 200 is an ST-1 which is listed as a weak explosion, and then there is an ST-2 and ST-3. I'm not sure if there's an ST-4. But, anyway, it's an ST-1 showing a weak explosion and that has to do with because of the range from zero to 200.” (Tr. 154.) Rima also testified that the ASTM²⁰ is “moving away from the K_{st} as a determining factor. They're moving to the pressure ratio. . . . In fact, they pretty much have.” (Tr. 633.) Rima also testified as to what the pressure ratio measures and opined that “[t]echnically, that pressure ratio tells you that when this sample exploded in the test chamber, it produced 6.41 times atmospheric pressures. So, it increased what our normal air pressure is 6.14 times, and that’s pretty impressive.” (*Id.*) In Rima’s opinion, SLTC designed its test protocols to avoid the chance of a false positive result, even if the result is a possible false negative. (Tr. 617.)

When asked what a “Class II” dust finding was, Rima opined that it was “a subset of combustible dust” that is “readily ignitable by an electrical spark, that it provides sufficient violence in its explosion to create a hazard and that it meets the general criteria of a combustible dust.” (Tr. 607.) Rima also opined that a Class II or hazardous classified location within a facility is one that “has the presence of enough Class II dust that an explosion or [fire] could take place. . . . The issue in that area becomes one of using electrical installation that is designed for a

²⁰ ASTM is the American Society of Testing Methods.

classified location is the correct class and division.” (Tr. 608.)

When asked if there were typical electrical voltage ranges found in industrial settings, Rima opined that it is “possible to determine at least to some extent what the voltage is at a particular location by looking at, for instance, the outlets. Outlets are specific to types of voltages that are available.” (Tr. 608.) “If you look at such things as electrical motors, they indicate what voltage they are designed to be operated at.” (Tr. 608.) When asked what voltages he was aware of in the industrial setting, Rima responded, “Control voltages, I’ve seen as low as five volts, and I’m aware of voltages as high as 480 volts in industrial settings.” (Tr. 609.)

Significantly, when asked “as a supervisor who reviewed the test data here and the test results, what opinion do you hold, if any, about the combustibility of the dust in that sample,” Rima opined that “this dust presents a significant explosion hazard, [] the explosion severity of 1.37 is significantly higher than the .5 minimum that is required to show that the dust is a Class II dust,” and that “the Hartman K_{st} and pressure ratio numbers [] are significant for our test protocol numbers as far as the violence of a dust explosion or explosion potential.” (Tr. 609-11). “So, this dust is closing in on three times the level needed to show the minimum level to show that dust is Class II. So, this dust is very definitely a Class II dust.” (Tr. 633.)

Rust also testified that the ductwork posed a fire and/or explosion hazard because the dust collector and the ductwork were both contained areas, combustible dust was at times suspended in the areas, and combustible dust that caught on fire would create a pressure build-up sufficient to cause an explosion, or a ball of fire could travel out of any openings in the system. (Tr. 198-99, 347-50.) Rust opined that the elements of both the “fire triangle” and “explosion pentagon” were met even though he had no personal knowledge of Cooper Tire, the materials it used, or its facility. (Tr. 347-350, 610-611.) When asked if he had ever been involved in conducting hazard

assessments at employers' job sites to determine whether they have any type of hazard, Rima admitted, only in “a second person context” since his “experience in that regard [was] reviewing photos and other information provided by compliance officers to [him]” and that he had “never been on a workplace job site” to undertake an analysis “about the nature of the materials they may handle, which may or may not be combustible dust.” (Tr. 620.)

As to the Secretary’s proposed feasible and useful abatement method to correct the alleged combustible dust fire and explosion hazards, according to Rust, Cooper Tire had allocated money for the relief panels and “went to the manufacturer to obtain these panels.” (Tr. 204, 206.) Thus, Rima opined “so it's very feasible, and this equipment is very common ... it’s very feasible and economical.” (Tr. 204.)

Analysis of Rima’s Opinion Testimony

Rule 701 of the Federal Rules of Evidence provides that “[i]f a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is: (a) rationally based on the witness’s perception; (b) helpful to clearly understanding the witness’s testimony or to determining a fact in issue; and (c) *not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.*” Fed. R. Evid. 701. (Emphasis added.) Thus, Rule 701(c) is intended “to eliminate the risk that the reliability requirements set forth in Rule 702²¹ will be evaded through the simple expedient of proffering an expert in lay witness clothing.” Fed. R. Evid. 701 Notes of Advisory Committee on 2000 amendments. “[T]he admissibility of all expert testimony is governed by the principles of Rule 104(a). Under that Rule, the proponent

²¹ Rule 702 provides that a witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: “(a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.” Fed. R. Evid. 702.

has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence. *See Bourjaily v. United States*, 483 U.S. 171 (1987).” *Id.*

In *Kaspar Electroplating Corp.*, 16 BNA 1517, 1519 (No. 90–2866, 1993) (citing *Harrington Constr. Corp.*, 4 BNA OSHC 1471, 1472 (No. 9809, 1976), the Commission held that opinion testimony by an OSHA compliance officer may be admissible as non-expert testimony if it is “helpful in the resolution of a material issue and is based on his personal knowledge.” However, in *Harrington*, the Commission noted it was applying Rule 701 of the Federal Rule of Evidences, which became effective prior to its holding in that case, “as a subsequent restatement of the best learning and more modern case law.” *Harrington Constr. Corp.*, 4 BNA OSHC at 1473 n. 3. Significantly, however, *Harrington* referenced the language of Rule 701 *as it existed in 1975*, which *did not* include the 2000 amendment adding subsection (c), *i.e.*, if a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is “*not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.*” Therefore, the Commission’s precedent must be read *in pari materia* with the 2000 amendment to Rule 701 adding subsection (c). Even in *Kaspar*, however, the Commission held that “Commission judges should not admit opinion testimony by a compliance officer on a subject about which only an expert may testify, unless the compliance officer has been shown qualified as an expert in that area.” *Kaspar Electroplating Corp.*, 16 BNA 1517, 1519.

This comports with the Fifth Circuit, which has reiterated that “a lay witness may not give an opinion that requires scientific, technical or other specialized knowledge within the scope

of Rule 702.” *United States v. El-Mezain*, 664 F.3d 467, 511 (5th Cir. 2011). *See also*, *United States v. McMillan*, 600 F.3d 434, 456 (5th Cir. 2010) (“A witness who provides only lay testimony may give limited opinions that are based on the witness's perception and that are helpful in understanding the testimony or in determining a fact in issue, *but the witness may not opine based on scientific, technical, or other specialized knowledge.*”). (Emphasis added.)

Therefore, “*any* part of a witness’s opinion that rests on scientific, technical, or specialized knowledge must be determined by reference to Rule 702, not Rule 701.” (Emphasis in original.) *United States v. Breland*, 366 F. App’x 548, 552 (5th Cir. 2010) (citation omitted). The Court notes, however, that Rule 701 “does not distinguish between expert and lay *witnesses*, but rather between expert and lay *testimony*.” (Emphasis in original.) *Id.* In adopting the 2000 amendment to Rule 701, the Advisory Committee stated that the distinction between lay and expert testimony is that lay testimony “results from a process of reasoning familiar in everyday life,” while expert testimony “results from a process of reasoning which can be mastered only by specialists in the field.” *Id.*

The Fifth Circuit has adopted this distinction. Accordingly, this Court must distinguish a process of reasoning “familiar in everyday life” from that “which can only be mastered by experts in the field.” *United States v. Diaz*, 420 F. App’x 456, 464 (5th Cir. 2011) (citing *United States v. Caldwell*, 586 F.3d 338, 348 (5th Cir.2009)). To determine whether a lay opinion constitutes expert testimony, the Fifth Circuit has noted that “the trend in the circuits seems to be whether the testimony falls within the realm of knowledge of the average lay person.” *Id.* *See, e.g., United States v. Garcia*, 413 F.3d 201, 215–16 (2^d Cir. 2005). Here, Rima’s testimony included testimony that clearly did not fall within the realm of knowledge of the average lay person. Therefore, the Secretary was required to satisfy the requirements of Rule 701 and

impermissibly attempted to evade the reliability requirements set forth in Rule 702 by proffering these experts “in lay witness clothing.”

The Court recognizes that testimony need not be excluded as improper lay opinion, even if some specialized knowledge was required, “if it was based on first-hand observations in a specific investigation.” *United States v. Akins*, 746 F.3d 590, 599 (5th Cir. 2014) (citing *El-Mezain*, 664 F.3d at 514). The Secretary argues that Rima’s opinions were admissible since they were based on his “personal perception,” his “past experiences performing analysis and supervising,” and his “personal knowledge and experience,” and because his testimony “did not involve application of scientific expertise but, rather, personal understanding of the components of his own laboratory.” (Compl’t’s Resp. Resp’t’s Mot. Strike, pp. 4, 5.) The Court finds no merit in the Secretary’s position.

Rule 602 of the Federal Rules of Evidence mandates that except for a witness’s expert testimony under Rule 703, “[a] witness may testify to a matter *only if* evidence is introduced sufficient to support a finding that the witness has *personal knowledge* of the matter.” (Emphasis added). Fed. R. Evid. 602. Here, Rima was not involved in the inspection of the Tupelo Plant that led to the citations at issue in this case and admitted that he had never been on a workplace job site to undertake an analysis about the nature of the materials handled to determine if the materials were combustible dust. He was also not involved in the actual SLTC testing of the Rust sample and admitted that he had no direct knowledge as to the amount of energy given out with the ignition source. He was also not aware of any volatile analysis performed on the Rust sample.

Therefore, Rima’s opinions were not “based on first-hand observations in a specific investigation” but rather, were based on his knowledge of testing apparatuses, testing methods,

and the technical properties of combustible dust, none of which are within the realm of knowledge of the average lay person. Therefore, the Court concludes that Rima's lay opinion testimony, *supra*, unquestionably fell within the scope of Rule 702. Further, although the *Akins* Court permitted lay opinions that required only *some* specialized knowledge, Rima's lay opinions were based upon his *extensive* specialized knowledge gained from his experience working for thirty-five years as a technician, an analytical chemist, and as a supervisory chemist. Rima's testimony did not result "from a process of reasoning familiar in everyday life" but rather, was based upon his "scientific, technical or other specialized knowledge" that "result[ed] from a process of reasoning which can be mastered only by specialists in the field."

The Court also finds no merit in the Secretary's argument that Rima's testimony in his capacity as a "supervisor" somehow "cured" the Rule 701 violation; it was still impermissible lay opinion testimony that was not based on his first-hand observations in a specific investigation but rather, were based on his scientific, technical, and specialized knowledge within the scope of Rule 702. As the Advisory Notes indicate, "[t]here is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute." *Ladd, Expert Testimony*, 5 Vand.L.Rev. 414, 418 (1952). Applying that test in the present case, it is clear that common sense dictates that the untrained layman would *not* be qualified to determine intelligently and to the best possible degree these particular issues without enlightenment from those having a specialized understanding of the subjects involved in this dispute.

The Fifth Circuit has held that "[i]f a witness is called upon to provide an expert opinion

because the witness’s specialized knowledge may assist the [court’s] understanding of the issues, the [] court is required by its gatekeeping role to ensure that the expert is properly qualified and that the testimony is reliable.” *McMillan*, 600 F.3d at 456. As the gatekeeper, it is ultimately the Court’s responsibility to channel testimony that is actually expert testimony to Rule 702, even where a timely objection is not made. *See, e.g., Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993) (finding that judge serves as a “gatekeeper” to “ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable”); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 149 (1999) (extending the court’s gatekeeper function to all expert testimony).

Cooper Tire also argued that Rima “presented opinion testimony on the ultimate dispute at issue –whether the dust at Cooper Tire’s facilities posed an explosion of deflagration hazard.” (Resp’t’s Mot. Strike, p. 7) (*citing* Tr. 610-11). Thus, Cooper Tire argues that “[w]ithout having ever visited Cooper Tire’s facility, without knowing what materials Cooper Tire uses in its mixing department, without knowing whether the [Rust] sample . . . was representative of other dust at Cooper Tire’s Tupelo facility, and without even knowing whether a competent ignition source existed at Cooper Tire’s facility to ignite a dust cloud, Mr. Rima testified that his ‘opinion is that this dust presents a significant explosion hazard.’” (*Id.*; *citing* Tr. 611.) In response, the Secretary argues that “[i]t is well established that Fed.R.Evid. 704 permits a witness to express an opinion as to an ultimate issue that must be decided by the trier of fact.’ *United States v. Gold*, 743 F.2d 800, 817 (11th Cir. 1984) (*citing United States v. Miller*, 600 F.2d 498, 500 (5th

Cir.), *cert. denied*, 444 U.S. 955, 100 S.Ct. 434 (1979).”²² (Compl’t’s Resp. Resp’t’s Mot. Strike, p. 9.)

The Court agrees with Cooper Tire and finds no merit in the Secretary’ argument since both *Gold* and *Miller*, decided before the 2000 amendment to Rule 704 adding subsection (c), have been superseded by that amendment, *i.e.*, that if a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is “*not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.*” *See, e.g., United States v. White*, 492 F.3d 380, 404 (6th Cir. 2007) (although somewhat instructive factually, these cases do not consider whether the challenged testimony more properly fell within the ambit of Rule 702).

Further, although Rule 704 provides that “[a]n opinion is not objectionable just because it embraces an ultimate issue[.]” Fed. R. Evid. 704, this exception applies to ultimate questions of *fact*, not ultimate questions of *law*. In *Erickson Air-Crane, Inc.*, 2012 WL 762001, at *5 n.7 (No. 07-0645, 2012), the Commission held that the Judge “was correct in refusing to allow [expert] testimony because it pertained only to legal conclusions.” *See also, J.C. Watson Co.*, 22 BNA OSHC 1235, 1238n.3, (Nos. 05-175 & 05-0176, 2008) (determining the judge properly refused to permit expert testimony concerning conclusions of law). *See also, Greenleaf Motor Express Inc.*, 21 BNA OSHC 1872, 1876-77 (No. 03-1305, 2007) (upholding judge’s exclusion of expert whose

²² The Secretary cited the Eleventh Circuit, which is not binding in this case. Here, the violations alleged occurred in Tupelo, Mississippi, which is in the Fifth Circuit. Cooper Tire’s corporate headquarters are in Findlay, Ohio, which is in the Sixth Circuit. Therefore, either party may appeal to the Fifth Circuit or the Sixth Circuit, and in addition, Cooper Tire may also appeal to the District of Columbia Circuit. *See* 29 U.S.C. § 660(a) & (b).

proffered testimony did not “address any factual issue that required scientific or technical expertise to understand”). This comports with cases in the Fifth, Sixth, and District of Columbia Circuits, which have similar holdings.

The Fifth Circuit has held that it is “generally prohibited for a lay witness to interpret statutes and to give legal opinions.” *United States v. El-Mezain*, 664 F.3d at 511 (citing *United States v. Griffin*, 324 F.3d 330, 347-48 (5th Cir. 2003)). Even “an expert may [not] render conclusions of law” (citations omitted). *Goodman v. Harris Cnty.*, 571 F.3d 388, 399 (5th Cir. 2009). Likewise, in *Killion v. KeHE Distributors, LLC*, 761 F.3d 574, 593 (6th Cir. 2014), the Sixth Circuit held that the district court did not abuse its discretion when it determined that although an expert’s report contained permissible conclusions embracing the ultimate issue, it also contained impermissible legal conclusions. The District of Columbia Circuit has also held that “[t]he duty to issue [legal] conclusions devolve [sic] on the courts and lay legal conclusions are inadmissible in evidence” (citations omitted). *Christiansen v. National Savs. & Trust Co.*, 683 F.2d 520, 529 (D.C.Cir.1982); *see also Burkhart v. Washington Metro. Area Trans. Auth.*, 112 F.3d 1207, 1212-13 (D.C. Cir. 1997) (finding error when the trial court permitted Burkhart's expert to testify regarding impermissible legal conclusions rather than permissible factual opinions).

EXPERT WITNESSES

The Secretary’s Expert

Dr. Robert G. Zalosh received a Ph.D. in mechanical engineering from Northeastern University in 1970. (C-35). Since 1998, he has provided consultation on fire and explosion hazards and appropriate measures in industrial facilities. From 1990 to 2006, Dr. Zalosh taught Fire Protection Engineering at Worcester Polytechnic Institute in

Worcester, Massachusetts where he is now a Professor Emeritus. (*Id.*) He is a member of the National Fire Protection Association (NFPA), which produced the industry standards at issue in this proceeding, and has published handbook chapters on their behalf. (*Id.*) Dr. Zalosh sits on NFPA's Explosion Protection Committee, Gas Process Safety Committee, and Combustible Metals Committee. (*Id.*) Dr. Zalosh qualified to testify as an expert regarding "combustible dust analyses, including investigations of combustible dust [fires] and explosions, and identifying suitable safety devices for protection against such hazards." (Tr. 977.)

Cooper Tire's Expert

Dr. Timothy Meyers received a Ph.D. in Chemical Engineering from the University of California, Berkeley, in 1999. (R-41 App'x. A.) He is a principal engineer for Exponent, a business providing consultation in failure analysis, and provides consultation for Exponent's thermal sciences practice. (*Id.*) Prior to joining Exponent, Dr. Meyers was a Graduate Student Researcher at the University of California, Berkeley, and Lawrence Berkeley National Laboratory. (*Id.*) Dr. Myers applies chemical engineering principles to analyze industrial processes and to investigate and prevent incidents involving chemical releases, fires, and explosions. His investigations have included incidents involving chemical and industrial facilities, the warehousing and transport of hazardous chemicals, commercial and residential structures, consumer products, and burn injuries. Dr. Myers has investigated incidents involving combustion equipment ranging from hand held torches fueled by propane, to residential heating systems fueled by natural gas or oil, to industrial boilers fueled by coal. (*Id.*) He has

conducted engineering analysis and experimental testing involving chemical reactions, heat and mass transfer, fluid mechanics, thermodynamics, fires, and dust and gas explosions. (*Id.*)

Dr. Myers has investigated several catastrophic dust explosions that have occurred throughout North America. His work in these investigations has included determining the origin and cause of the explosions, experimentally measuring the dust explosion properties of materials, modeling explosion dynamics, and determining compliance of the facility with current and historical regulations, codes, and guidelines for the prevention of dust explosions. Dr. Myers audits new and existing facilities for dust explosion hazards, and assists clients in developing approaches to mitigate dust explosion hazards, including assistance with OSHA's NEP. (*Id.*) Dr. Meyers "is a principal member of six NFPA technical committees responsible for standards related to the prevention and mitigation of dust fires and explosions. (*Id.*) Dr. Myers is the vice-chairman of the ASTM committee responsible for the development of standards to determine the thermal stability of liquid and solids and the ignition and flammability properties of gases, vapors, and dusts clouds. (*Id.*) Dr. Meyers qualified to testify as an expert in "combustible dust and whether materials are combustible dust, including the fire explosion hazards in that regard." (Tr. 1683.)

With regard to their credibility, both witnesses had impressive credentials and their testimony at trial was cogent and instructive. However, due to a lack of data at times, Dr. Zalosh presumed facts that were not established (*e.g.*, the composition of the dust mixture located in the ductwork and dust collectors during the OSHA inspection). Further, Dr. Zalosh sometimes

relied on Rima's testimony as the basis for his opinions. In addition, Dr. Zalosh referenced the 2006 version of NFPA 654 in his opinions related to Paragraphs 7.13.1.5 and 7.1.4.2 of NFPA 654, even though the 2000 version of Chapter 7.3 of NFPA 654 was the version cited in Amended Citation Number 2, Item 1. (*See Compl't's' Unopposed Mot. Am. Compl. And Cit. 2, Item 1, pp. 2-3; Order Granting Compl't's Unopposed Mot. Am.; C-36, p. 15.*) In those instances, Dr. Zalosh's opinions were accorded little weight.

BACKGROUND

Carbon Black

According to the *Fire Protection Handbook* of the National Fire Protection Association (NFPA), "Carbon black is manufactured by the decomposition of acetylene, by incomplete combustion of natural gas or a mixture of natural gas and a liquid hydrocarbon, or by cracking hydrocarbon vapor in the absence of air." (R-1, p. 4.) In its *Carbon Black User's Guide*, the International Carbon Black Association (ICBA) states,

[Carbon black's] physical appearance is that of a black, finely divided pellet or powder. Its use in tires, rubber and plastic products, printing inks and coatings is related to properties of specific surface area, particle size and structure, conductivity and color. Carbon black is also in the top 50 industrial chemicals manufactured worldwide, based on annual tonnage. Current worldwide production is about 18 billion pounds per year [8.1 million metric tons]. Approximately 90% of carbon black is used in rubber applications, 9% as a pigment, and the remaining 1% as an essential ingredient in hundreds of diverse applications.

(R-1, p. 5.) Dr. Meyers testified that carbon black "isn't a new chemical that [the tire industry] just recently started using. It's something that's used in very large quantities, and the tire industry is a major user of carbon black." (Tr. 1847.)

The Tupelo Plant

As part of the tire manufacturing process at the Tupelo Plant, rubber is compounded with different ingredients to yield the desired performance requirements for components of specific tires. To make tires, Cooper Tire uses various materials, like natural rubber, oil, and carbon black. (Resp't's Proposed Findings of Fact, p. 1; Tr. 458, 1385-86, 1736-37; *see also* R-41, p. 2, § 1.1.) The Tupelo Plant proceeds sequentially through several departments: the Raw Materials Department, the Mixing Department, the Material Prep Area, the First and Second Stage Tire Rooms, the Curing Area, and the Finishing Department. (Tr. 896-898.) The Mixing Department consists of a first floor, a second floor, and a mezzanine between the two floors. The Mixing Department covers approximately 2,400 square feet. The Banbury Mixers take up approximately one-third of the Mixing Department space. (Tr. 113-14.) Banbury Mixers 2, 3, and 4 begin on the second floor of the Mixing Department and extend through the mezzanine to the first floor.

Cooper Tire receives pure, or virgin, carbon black at the rail or truck unloading area of the facility and stores it in silos. Cooper Tire then transports the carbon black to the day bins on the roof of the facility. (Tr. 39.) Under the day bins, employees feed the carbon black to scales where they weigh it before feeding it into the Banbury Mixers, which are large industrial internal batch mixers. (Tr. 13, 39.) The materials are mixed together in a Banbury Mixer, which creates a sheet of rubber called a "slab." (Resp't's Proposed Findings of Fact., p. 1; Tr. 1384-1386.) This is the "master mixture" phase, and it occurs in Mixers 3 and 4. (*Id.*; Tr. 1387-1389, 1737-1738.) The materials used in Mixers 3 and 4 "are significantly different" than those used during the final phase. (*Id.*; Tr. 1387-89.) The slab is then transferred to the final mixer, Mixers 2, where other chemicals are added based on specific formulas being used. (*Id.*) The principal component of the dust described in OSHA's Citation is carbon black, which was the material used in Mixers 3 and 4; other compounds were not added until the next stage of the process at Mixer 2. (*Id.*; C-

43; R-48.)

The Tupelo Plant has extensive dust collection systems connected to its processing equipment, and routine housekeeping was performed on a regular schedule. (Tr. 173, 1261-63, 1389-90, 1400-01.) The dust collectors are located on the roof of the Mixing Department and collect dust generated during the manufacturing process from the loading or charging area (where carbon black and other ingredients are added to the Banbury Mixers), the weighing area, and the mezzanine. (C-12, p. 2; C-64, p. 2; Tr. 115, 118-19.) If the dust collection system stops functioning, the mixing process would automatically shut down. (Tr. 1392-94.) A contractor—Hydrovac—performed comprehensive cleaning of the Tupelo Plant on a quarterly basis. (Tr. 173, 1261-63, 1260-61.) A portable industrial vacuum was also used to address lower-level cleaning issues. (Tr. 1400-02.) Automatic and manual fire suppression systems were in place and operational at the Tupelo Plant. (Tr. 1390-91.) Cooper Tire contracted out maintenance of the Mixing Department equipment to JESCO, a third-party onsite contractor. JESCO's maintenance manager reported to Brian Weibel. (Tr. 43-44, 84.)

OSHA's Inspection and Laboratory Analysis

At some point, OSHA inspected Cooper Tire's Findlay, Ohio, facility and based on those findings, OSHA's Jackson, Mississippi area office received instructions to inspect the Tupelo Plant's Mixing Department. (Tr. 107, 109.) Thus, on December 7, 2010, Rust opened an inspection at the Tupelo Plant and was accompanied by OSHA Industrial Hygienist Margo Westmoreland, who was charged with conducting a health inspection, and two representatives from Cooper Tire, Chris Colburn and John Swartzenruber.²³ (Tr. 107, 110.) Rust interviewed

²³ Initially, Rust and Westmoreland believed they were under orders to conduct a "comprehensive inspection that would include the whole facility," which covers 1.6 million square feet. (Tr. 88, 128.) Subsequently, they learned the inspection should be limited to the Mixing Department. (Tr. 128.) Due to the limited inspection of only the

Cooper Tire representatives and took photographs. (Tr. 113.) Rust also learned that Cooper Tire had hired an outside contractor, Hydrovac, to clean the Mixing Department periodically and that Hydrovac had last cleaned the Tupelo Plant in June 2010, approximately six months before the OSHA inspection. (Tr. 159.)

While inspecting the Tupelo Plant, Rust observed that dust had accumulated on some of the electrical equipment and the superstructure of the mezzanine, including overhead beams, and thereafter photographed the mezzanine area, including the overhead beams, pipes and flexible hoses, an electrical junction box, motor enclosures, and motor cooling fans. (Tr. 135-40; *see also* C-17; C-18; C-19.) Rust also observed dust accumulations of three to four inches thick on the metal flange of the superstructure, near the five to six-inch accumulation, which he measured using his “six-inch scale.” (Tr. 143, 146.)

Rust collected only one dust sample (Rust sample) from “the superstructure. That's the beams, the metal beams above the mezzanine floor. That's about around seven foot. I could reach it from the floor... [but] I got closer on the ladder” (Tr. 302-03.) Rust selected that precise area because that “was where most of the dust was collected or accumulated, and it was easier to get to.” (*Id.* 303.) He placed the scoops of dust in a one-liter plastic bottle and shipped the sample to the SLTC and requested the SLTC to analyze the material for Class II dust. (Tr. 150-152.)

Steven Eugene Anderson was the analytical chemist for the SLTC that conducted the testing on the Rust sample.²⁴ Since Rust initially asked the SLTC to analyze the material for

Mixing Department, Westmoreland was no longer required to conduct a health inspection but nonetheless accompanied Rust during the rest of his inspection. (Tr. 129-30.)

²⁴ Anderson has a bachelor's degree in chemistry from River State University, which is an American Chemical Society certified degree. (Tr. 478.) At the time of trial, Anderson had been with OSHA, “three and a half years at this point. I did work for them for three years back in the Eighties” (Tr. 477.) He worked for Westinghouse for “22-something years as an analytical chemist. I was lab manager, I was manager of quality engineering, and I was laid off in the early 2000s and then eventually ended up back at OSHA again.” (Tr. 478.) At Westinghouse “[h]e did analytical chemist work but mostly ICP. There was nothing really associated with explosive dusts there...Inductivity

Class II dust, Anderson conducted a Class II dust explosibility screening test on the Rust sample in a Hartmann 1.2 liter testing chamber and issued a lab report indicating that the Rust sample was a “Class II dust” with an explosion severity of 1.37. (Tr. 485.) Following SLTC testing protocol, Anderson ran a validation test and obtained an explosion severity result of 2.26 and reported the lower of the two values. (Tr. 494.)

Anderson testified that Rust subsequently requested a K_{st} test of the Rust sample and that “[Rima] made the decision to, rather than testing it for K_{st} , we reported a K_{st} based on the values that were determined in the Class II test.” (Tr. 495.) Thus, after Rust requested that the SLTC conduct a K_{st} test, Anderson issued a supplemental K_{st} report without running a separate K_{st} test, instead basing his report on the values he extrapolated from the Class II test. (*Id.*) The supplemental K_{st} report indicates that the Rust sample was “a Class II Dust,” which indicated that the Explosion Severity was 1.37, also included a comment that it was obtained in a 1.2 liter Hartmann vessel. (Tr. 495, 529.) Anderson opined that this value was a “positive” Class II dust finding because “if the explosion severity is greater than .5, it is considered a Class II dust.” (*Id.*) Anderson further opined that the positive Class II test result here was not a false positive, because “[t]he source of the spark is so small in my experience, I just don't see how you could ever get a false positive using the Hartman.” (Tr. 491.)

Since Anderson was also identified by the Secretary as lay witnesses in his pretrial statement, (Compl't's Pre-Hr'g Statmnt, p. 12), and like Rima, the Secretary did not attempt to

coupled plasma, analyzed for metals.” (*Id.*) As a chemical analyst, Anderson testified that “mainly I work with combustible dusts. I also do soils which are trenching kinds of things, I do a little ICP work, and a few other minor things, but my main duties have been explosibility, explosive combustible dust since I started in 2009.” (Tr. 477.) Related to his responsibilities and duties are as it pertains to combustible dust, Anderson testified that he “receive[s] samples from the sample room, assure that the chain of custody is maintained, take the samples to the laboratory, the explosibility lab, inspect the samples, check for their integrity, make sure that the numbers match, the seals are intact, that there's enough sample, and then proceed to process those samples for combustible dust.” (Tr. 478.) His job since 2009 has involved testing on combustible materials “about eighty percent probably. The other 20 percent mostly soils and assorted other things.” (Tr. 479.)

qualify Anderson as expert witnesses under Rule 702, the Court gives little weight to Anderson's impermissible opinion that this value was a "positive" Class II dust finding because "if the explosion severity is greater than .5, it is considered a Class II dust" and that the positive Class II test result was not a false positive, which clearly rested on his scientific, technical, or specialized knowledge. The Court also takes judicial notice that in *Vitakraft Sunseed, Inc.*, 2014 WL 5794302, at *3 (No. 12-1811, 2014) (ALJ), which went to trial shortly after the present case, the Secretary *did* qualify Anderson as an expert witness "in testing of combustible dusts, analysis of those test results, and in determining the combustible and explosive nature of dusts."²⁵

Imperial Sugar Company Dust Explosion

This proceeding is best understood against the backdrop of the tragic Imperial Sugar Company dust explosion in 2008 at its sugar refinery in Port Wentworth, Georgia, northwest of Savannah. The explosion and resulting fires killed 14 people and injured 36 others. The significance of the Imperial Sugar Company dust explosion to this proceeding is undisputed. Witnesses for both parties referred to that event repeatedly throughout the trial. (*See, e.g.*, Tr. 66, 135, 155, 289-93, 391, 404-08, 452-53, 776, 864, 899, 902, 1679, and 1749.) However, neither party adduced an authoritative account of the relevant facts of that event or its historical context. In order to present a more detailed background, the Court *sua sponte* takes judicial notice of two related

²⁵ "A court may take judicial notice of its own records." *United States v. Valencia*, 44 F.3d 269, 273 n. 3 (5th Cir. 1995); *Sec. & Exch. Comm'n v. First Fin. Group of Tex.*, 645 F.2d 429, 433 n. 6 (5th Cir.1981); *Epperson v. Manning-Ward*, 181 F.3d 100 (6th Cir. 1999); *United States v. Clemons*, 440 F.2d 205, 211 (D.C. Cir. 1970). In fact it is recognized that a federal district court may even take judicial notice of judicial proceedings in a different federal court. *Wells v. United States*, 318 U.S. 257, 260 (1943).

investigative reports issued by the U.S. Chemical Safety Board (CSB).²⁶ The first report is *Investigative Report: Combustible Dust Hazard Study*, Report No. 2006-H-1 issued on November 15, 2006 (2006 CBS Report),²⁷ and the second report is *Investigation Report: Sugar Dust Explosion and Fire*, Report No. 2008-05-1-GA issued on September 24, 2009 (2009 CBS Report).²⁸

On November 15, 2006, the CSB completed a Combustible Dust Study and issued its 2006 CBS Report, which identified at least 281 combustible dust fires and explosions in general industry between 1980 and 2005, which cause at least 119 fatalities and 718 injuries in the United States. (2006 CBS Report, p. 4.) Based on these findings, the CSB recommended that “OSHA issue a comprehensive combustible dust standard for general industry that addresses hazard assessment, engineering controls, housekeeping, and worker training.” (*Id.*, p. 3.) The CSB also recommended that “[t]he OSHA standard should be based on the “well-recognized” NFPA voluntary consensus standards.” (*Id.*)

On February 7, 2008, the catastrophic explosion occurred at the Imperial Sugar Company. The CBS extensively investigated the explosion and issued its 2009 CBS Report, which concluded that a sugar dust explosion occurred in the enclosed steel

²⁶ The federal rules of evidence provide that a court may judicially notice a fact that is not subject to reasonable dispute because it “can be accurately and readily determined from sources whose accuracy cannot be reasonably questioned.” Fed. R. Evid. 201(b) (2). The Court may take judicial notice on its own and at any stage of the proceeding. Fed. R. Evid. 201(c) and (d). The CSB is an independent federal agency authorized by the Clean Air Act Amendments of 1990. It became operative in January 1998. 42 U.S.C. § 7412. The CSB is required to “investigate (or cause to be investigated), determine and report to the public in writing the facts, conditions, and circumstances and the cause or probable cause of any accidental release resulting in a fatality, serious injury or substantial property damages[.]” 42 U.S.C. § 7412(r) (6) (c) (i). The Court concludes that the CBS reports are a source whose accuracy cannot be reasonably questioned.

²⁷ See http://www.csb.gov/assets/1/19/dust_final_report_website_11-17-06.pdf.

²⁸ See http://www.csb.gov/assets/1/19/imperial_sugar_report_final_updated.pdf.

conveyor belt under the granulated sugar storage silos, followed by massive secondary dust explosions throughout the refinery. The CSB's description of the event is harrowing:

At about 7:15 p.m. on February 7, 2008, a sugar dust explosion occurred in the enclosed steel conveyor belt under the granulated sugar storage silos at the Imperial Sugar Company sugar manufacturing facility in Port Wentworth, Georgia. Seconds later, massive secondary dust explosions propagated throughout the entire granulated and powdered sugar packing buildings, bulk sugar loading buildings, and parts of the raw sugar refinery. Three-inch thick concrete floors heaved and buckled from the explosive force of the secondary dust explosions as they moved through the four-story building on the south and east sides of the silos. The wooden plank roof on the palletizer building was shattered and blown into the bulk sugar railcar loading area. Security cameras located at businesses to the north, south, and west of the facility captured the sudden, violent fireball eruptions out of the penthouse on top of the silos, the west bucket elevator structure, and surrounding buildings.

When Garden City and Port Wentworth fire department personnel arrived minutes later they were confronted with dense smoke, intense heat, ruptured fire water mains, and large amounts of debris strewn around the fully involved burning buildings. Workers at the facility had already started search and rescue efforts and injured workers were being triaged at the main gate guardhouse.

Eight workers died at the scene, including four who were trapped by falling debris and collapsing floors. Two of these fatally injured workers had reportedly reentered the building to attempt to rescue their co-workers, but failed to safely escape. Nineteen of the 36 workers transported to Savannah Memorial Hospital who were severely burned were transported to the Joseph M. Still Burn Center in Augusta, Georgia, where six eventually succumbed to injuries, bringing the total fatalities to 14 workers—the last burn victim died at the burn center six months after the incident.

Thirty six injured workers ultimately survived including some with permanent, life altering conditions. Approximately 85 other workers at the facility at the time of the incident were uninjured.

The major fires in the buildings were extinguished the next day, but small fires continued burning for many days. The granulated sugar fires in the 105-foot tall silos continued to smolder for more than 7 days before being extinguished by a commercial industrial firefighting company. The packing buildings, granulated sugar silos, and palletizer room were destroyed. The bulk sugar loading area and parts of the refinery were severely damaged by the explosion and fires.

(2009 CBS Report, pp. 3-4.) In the 2009 CBS Report, the CSB again recommended that OSHA

“[p]roceed expeditiously, consistent with the [CSB’s] November, 2006 recommendation and OSHA’s announced intention to conduct rulemaking, to promulgate a comprehensive standard to reduce or eliminate hazards from fire and explosion from combustible powders and dust.” (*Id.*, p. 69.)

OSHA’s Guidelines for the Inspection

Approximately five months before the Imperial Sugar Company dust explosion, OSHA initiated its NEP, which targeted industries where combustible dust could be present in the workplace. However, as a direct consequence of the Imperial explosion, on March 11, 2008, OSHA cancelled and replaced its original NEP.²⁹ (C-20.) The Executive Summary of the NEP indicates that OSHA reissued the NEP “to increase its enforcement activities and to focus on specific industry groups that have experienced either frequent combustible dust incidents or combustible dust incidents with catastrophic consequences.” (C-20, p. 3.) “As a result of a recent catastrophic accident involving a combustible dust explosion at a sugar refinery, OSHA has decided to intensify its focus on this hazard.” (*Id.*)

OSHA conducted the instant inspection under the auspices of the NEP, which applied “OSHA-wide” and “contains policies and procedures for inspecting workplaces that handle combustible dusts that are likely to cause dust conflagrations, other fires, or explosions.” (C-20, p. 1.) The NEP defines combustible dust as a “combustible particulate solid that present a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations, regardless of particle size or shape.” (C-20, p. 10.) “These dusts include, but are not limited to . . . [c]oal and other carbon dusts[.]” (*Id.*, p. 1.) “Industries that handle

²⁹ On March 11, 2008, OSHA cancelled and reissued the NEP with *Instruction CPL 03-00-008 Combustible Dust National Emphasis Program*. (*Id.*, p. 1.) The 2008 NEP was the relevant version in effect at the time of the inspection and resulting citations and all references hereinafter are to the 2008 NEP.

combustible dusts include, but are not limited to . . . [t]ire and rubber manufacturing plants[.]” (*Id.*, p. 6.) The NEP indicated that “[f]or workplaces not covered by 1910.272,^[30] but where combustible dust hazards exist within dust control systems or other containers, citations under section 5(a)(1) of the OSH Act (the General Duty Clause) may generally be issued for . . . fire, or explosion hazards.” (*Id.*, p. 3.)

The NEP instructs personnel that when conducting an inspection, “National Fire Protection Association (NFPA) standards (listed in Appendix A of this directive) should be consulted to obtain evidence of hazard recognition and feasible abatement methods.” (C-20, p. 3.) Appendix A of the NEP lists thirteen “NFPA Publications Relevant to Combustible Dust Hazard Controls.” (*Id.*, p. 29.) Of crucial importance to this case is NFPA 654, *Standard for Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids* (2006 Edition), which was cited in the abatement portion of Amended Citation Number 2, Item 1 (one feasible and useful abatement method to correct these hazards is to follow the requirements found in NFPA 654-2006, Chapter 7.13). (Compl’t’s Unopposed Mot. Am., p. 3; Order Granting Compl’t’s Unopposed Mot. Am; *see also* C-42.)

NFPA 654 provides in section 1.1.1 that it applies to “all phases of manufacturing, processing, blending, pneumatic conveying, repackaging, and handling of combustible particulate solids or hybrid mixtures, regardless of concentration or particle size, where the materials present a fire or explosion hazard.” (C-42, p. 8). NFPA 654 also defines combustible dust as a “combustible particulate solid that presents a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations, regardless of particle size or shape.” (*Id.*, p. 10.) Section 1.5 of NFPA 654 indicates that these provisions

³⁰ “This section contains requirements for the control of grain dust fires and explosions, and certain other safety hazards associated with grain handling facilities.” 29 C.F.R. §1910.272(a).

“reflect a consensus of what is necessary to provide an acceptable degree of protection from the hazards addressed in this standard at the time the standard was issued.” (C-42, p. 8). According to Rust, NFPA 654 applied to the Tupelo Plant since it handled combustible dust in its manufacturing process. (Tr. 202).

Anderson testified that he roughly followed the testing process in ASTM E789.³¹ (Tr. 536-537.) This test method covers the determination of the ignition of a dust dispersed in air, within a closed [Hartmann] vessel, but it does not provide a definitive determination of the flammability of a dust. (See R-68, p. 1.) Significantly, however, section 5.1 of ASTM E789 provides a limitation that “[t]he values determined by this test method are specific to the material tested and equipment and procedure used and are not to be considered inherent, fundamental properties.” (*Id.*) “The size and shape of the vessel have a direct bearing on the data obtained. *Extrapolation to vessels having a different volume and shape should not be made.*” (Emphasis added.) (*Id.*)

Despite the ASTM admonition that extrapolation was not appropriate, Anderson did exactly that when he extrapolated the K_{st} value from the data from the Class II test, which was obtained in a 1.2 liter Hartmann vessel, even though Appendix E protocol instructs that the K_{st} test should be conducted in a 20-liter vessel. (C-20, p. 38.) Further, Anderson admitted that the ASTM limitation meant that the Class II test data was limited, based on the specific vessel used. (Tr. 538.)

³¹ ASTM E789 (2001), which was withdrawn in 2007, was the consensus *Standard Test Method for Dust Explosions in a 1.2-Litre Closed Cylindrical Vessel*. The Secretary argues in his post-trial brief that “[t]he withdrawal of ASTM E789 does not have bearing on the issues in this case; the withdrawal was out of concern that engineers were using Hartmann data to design safety equipment, but the data is not useful for design because the results are typically low.” (Compl’t’s Post-Hr’g Br., p. 28 n 5; see also Tr., p. 660). The Court agrees.

ANALYSIS

As indicated *supra*, still pending before the Court are three disputed issues, which involve the Secretary's allegation in Amended Citation Number 2, Item 1 that Cooper Tire committed a willful³² violation of section 5(a)(1) of the Act, the "General Duty Clause," the Secretary's assertion in Citation Number 2, Item 2 that Cooper Tire willfully violated 29 C.F.R. § 1910.307(c)(2), the Hazardous (classified) Locations Standard, and the Secretary's allegations in Citation Number 1, Items 2a and 2b that Cooper Tire committed serious³³ violations of 29 C.F.R. § 1910.22(a), the General Housekeeping Standard.

For ease of discussion, the Court first collectively analyze the two alleged willful violations since they both involve similar alleged hazards. Thereafter, the Court will analyze the alleged serious citation, which does not assert a specific hazard.

Amended Citation Number 2, Item 1 Alleged Willful Violation of Section 5(a)(1)

Section 5(a)(1) of the Act, the "General Duty Clause," requires that Cooper Tire "furnish to each of [its] employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees." 29 U.S.C. § 654(a)(1). To prove a violation of the General Duty Clause, "the

³² "Willful violations are characterized by ... a plain indifference to employee safety, in which the employer manifests a heightened awareness ... that the conditions at its workplace present a hazard." *Bardav, Inc., d/b/a Martha's Vineyard Mobile Home Park*, 24 BNA OSHC 2105, 2111 (No. 10-1055, 2014) (citation omitted). However, mere negligence or lack of diligence is not sufficient to establish an employer's intentional disregard for or heightened awareness of a violation. *E.R. Zeiler Excavating, Inc.*, 24 BNA OSHC 2050, 2052 (No. 10-0610, 2014) (citation omitted).

³³ "[A] serious violation shall be deemed to exist in a place of employment if there is a substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations, or processes which have been adopted or are in use, in such place of employment unless the employer did not, and could not with the exercise of reasonable diligence, know of the presence of the violation." 29 U.S.C. § 666(k). Commission precedent requires a finding that "a serious injury is the likely result if an accident does occur." *Mosser Constr., Inc.*, 23 BNA OSHC 1044, 1046 (No. 08-0631, 2010) (citation omitted). "This does not mean that the occurrence of an accident must be a substantially probable result of the violative condition but, rather, that a serious injury is the likely result if an accident does occur." (*Id.*)

Secretary must show that: (1) a condition or activity in the workplace presented a hazard; (2) the employer or its industry recognized the hazard; (3) the hazard was likely to cause death or serious physical harm; and (4) a feasible means existed to eliminate or materially reduce the hazard.” *CSA Equipment Company, LLC*, 24 BNA OSHC 1476n. 1 (No. 12-1287, 2014) (citing *Pegasus Tower*, 21 BNA OSHC 1190, 1191 (No. 01-0547, 2005)). Thus, in a section 5(a)(1) case “the Secretary must show, among other things, the existence of the hazard, recognition of the hazard by the employer or the industry in general, and worker exposure to the hazard.” *Bunge Corp. v. Sec’y of Labor*, 638 F.2d 831, 835 (5th Cir. 1981).

In addition, “the Secretary must prove that the employer knew or, with the exercise of reasonable diligence, should have known of the conditions constituting the violation.” *S. Pan Servs. Co.*, 2014 WL 7338403, at *7 (No. 08-0866, 2014) (citing *Contour Erection & Siding Sys., Inc.*, 22 BNA OSHC 1072, 1073 (No. 06-0792, 2007); see also *Otis Elevator*, 21 BNA OSHC 2205, 2208 (No. 03-1344, 2007) (citing *Active Oil Serv. Inc.*, 21 BNA OSHC 1184, 1186 (No. 00-0553, 2005); *Danis Shook Joint Venture XXV*, 19 BNA OSHC 1497, 1501 (No. 98-1192, 2001), *aff’d*, 319 F.3d 805 (6th Cir. 2003)). Thus, as part of his burden, the Secretary “must define the cited hazard in a manner that gives the employer fair notice of its obligations under the Act by specifying conditions or practices over which the employer can reasonably be expected to exercise control.” *Otis Elevator*, 21 BNA OSHC at 2208.

In Amended Citation Number 2, Item 1, the Secretary asserts that Cooper Tire committed a willful violation of section 5(a)(1) of the Act, the “General Duty Clause,” because it “did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to Class II combustible dust explosion hazards because the carbon black dust

handling systems were not equipped with safety devices[.]” It appears that the Secretary had difficulty in separating the hazards he alleged (“employees were exposed to Class II combustible dust explosion hazards” and “employees were exposed to combustible dust fire and explosion hazards”) from the feasible means of abatement he identified (equip the carbon black dust handling systems with safety devices and protect the duct work system with deflagration and explosion protection).

“A workplace hazard cannot be defined in terms of a particular abatement method.” *Otis Elevator*, 21 BNA OSHC at 2208. Rather, the hazard must be defined “in terms of the physical agents that could injure employees rather than the means of abatement.” *Arcadian Corporation*, 20 BNA OSHC 2001, 2009 (No. 93-0628, 2004), *quoting Chevron Oil Co.*, 11 BNA OSHC 1329, 1331n. 6 (No. 10799, 1983). Nevertheless, while this alleged violation verges on defining the hazard in terms of the means of abatement, the Court concludes that the Secretary met his burden in defining the hazard in terms of the physical agents that could injure employees.

The Secretary argues in his post-trial brief that Cooper Tire “has suggested that different carbon black dust samples from its Mixing Department can result in less explosive mixtures, but [Cooper Tire] *has not shown* that it will always result in a non-explosive dust mixture.” (Emphasis in original.) (Compl’t’s Post-Hr’g Br., p. 75.) However, as indicated *supra*, it is the Secretary that has the burden of proof in this case to establish that the hazard existed. Therefore, Cooper Tire is not required to prove that the carbon black dust in its Mixing Department “will always result in a non-explosive dust mixture.”

The Secretary’s Amended Citation 2, Item 1 alleges that “[o]n or about December 7-8, 2010 on the 2nd floor of the mixing department, employees were exposed to combustible dust fire *and* explosion hazards due to [Cooper Tire’s] failure to protect the duct work system . . .

with deflagration and explosion protection.” (Emphasis added.) (Compl’t’s’ Unopposed Mot. Am. Compl. and Cit. 2, Item 1, pp. 2-3; Order Granting Compl’t’s Unopposed Mot. Am.) However, in his post-trial brief, the Secretary uses the conjunctive-disjunctive phrase “and/or” and asserts that Cooper Tire violated the Act “by failing to ensure its employees were protected from fire *and/or* explosion hazards associated with the ductwork[.]” (Emphasis added) (Compl’t’s Post-Hr’g Br., p. 1). The Secretary’s use of the conjunctive-disjunctive phrase “and/or” mischaracterizes the actual conjunction alleged, i.e., exposure to combustible dust fire *and* explosion hazards.

In *Mountain States Tel. & Tel. Co. v. Pueblo of Santa Ana*, 105 S. Ct. 2587, 2594 (1985), the Supreme Court held that “[t]he two clauses of § 17 of the Pueblo Lands Act are joined by the conjunctive ‘and.’ To us that means exactly what it says. ... Two things are required.” *See also, Murray v. Carrier*, 477 U.S. 478, 496 (1986) (reiterating that “cause” and “prejudice” are in the **conjunctive**, and petitioner must demonstrate both). Conversely, the word “or” “is almost always disjunctive, that is, the words it connects are to be given separate meanings.” *Loughrin v. United States*, 134 S. Ct. 2384, 2390 (2014). “Canons of construction ordinarily suggest that terms connected by a disjunctive be given separate meanings, unless the context dictates otherwise; here it does not.” *Reiter v. Sonotone Corp.*, 99 S. Ct. 2326, 2331 (1979). *See also, Goleman v. Wal-Mart Stores, Inc.*, 170 F.3d 183 (5th Cir. 1999) (where the verdict form provided only one line for “lost wages and/or lost earning capacity,” and thus, the Fifth Circuit held that the “combination of the conjunctive “and” and the disjunctive “or” suggested that the jury could award damages for *either*).

Thus, as the Commission observed in *The L.E. Myers Co.*, 12 BNA OSHC 1609 (No. 82–1137, 1986), *rev'd* on other grounds *sub nom*, *Brock v. L.E. Myers Co.*, 818 F.2d 1270 (6th Cir.1987), “it seems clear to us that the use of the word ‘and’ in the standard as originally promulgated was in the conjunctive, and that a violation could be established only upon proof of both (1) an exposure to a hazardous condition requiring the use of personal protective equipment, and (2) the failure to use this equipment when the need for its use is indicated elsewhere in Part 1926.” *The L.E. Myers Co.*, 12 BNA OSHC 1613. On appeal *sub nom*, *Brock v. L.E. Myers Co.*, the Sixth Circuit also concluded that “[a]lthough the current version of the standard uses the disjunctive “or” with respect to these separate clauses, its original version used the conjunctive “and” to indicate that both conditions must be satisfied. . . . Therefore, our analysis will proceed by taking as a given that a violation of *both* parts of § 1926.28(a) must be proven.” (Emphasis added.) *Brock v. L.E. Myers Co.*, 818 F.2d at 1275. Thus, the Court concludes that since the Secretary used the conjunction “and” in the Amended Citation 2, Item 1, he must prove that Cooper Tire’s employees were exposed to both “combustible dust fire *and* explosion hazards.”

Cooper Tire argues in its post-trial reply brief that the Secretary, “for the first time – perhaps recognizing that he failed to prove the requisite elements of an explosion hazard – presented an alternative carbon black ‘fire hazard’ theory allegedly stemming from a lack of ‘deflagration and explosion protection’ for the duct work servicing Mixers 3 & 4.” (Resp’t’s Reply Br., p. 7) (*Citing* Compl’t’s Post-Hr’g Br., pp. 75-76). Cooper Tire argues that “[t]he Secretary’s belated attempt to recast the nature of the ‘hazard’ under the General Duty Clause violation is improper.” (*Id.*) According to Cooper Tire, “[t]he Secretary did not cite Cooper for, and has never litigated this matter under a ‘fire hazard’ theory.” (*Id.*) The Court finds no merit in Cooper Tire’s argument.

As indicated *supra*, Amended Citation Number 2, Item 1 alleged in part that Cooper Tire's employees were exposed to both combustible dust fire *and* explosion hazards. Rust also testified that "we know from some of the fires that occurred in the ductwork system that a fire can-- could get into the ductwork because it has, I believe, in the one report, and that fire then can be drawn on into the dust collection system. It could also come back into the weighing area because there are no controls to isolate that." (Tr., pp. 189-90.) Further, Dr. Zalosh opined in his report that "[t]he particular need for inlet duct isolation in this facility is evident from the frequent fires near some of the dust pickup connections to the dust collection ducting together with the frequent presence of operating personnel near those pickup locations." (*Id.*, p. 15.) Dr. Zalosh also opined in his report that "Citation 1 Item 2(a) is particularly serious because of the Cooper fire history of frequent fires in the mixing area just under and around the mezzanine. This history suggests that a flash fire endangering personnel in and under the mezzanine should be anticipated if dust accumulations observed by the OSHA Compliance Officer are allowed to continue." (C-36, pp. 15-16.) Thus, the Court concludes that Cooper Tire had fair notice that the Secretary was pursuing both *fire and* explosion hazard theories.

As indicated *supra*, the final element in establishing a general duty clause violation is the Secretary's showing that the proposed abatement will "eliminate or materially reduce the hazard." *Cardinal Operating Company*, 11 BNA OSHC 1675 (No. 80-1500, 1983). "The proposed method of abatement is judged by what a reasonable person familiar with the conditions of the industry would have instituted." *Secretary v. Valley Interior Systems, Inc.*, 21 BNA OSHC 2224, 2231 (No. 06-1395, 2007). In his

post-trial brief, the Secretary asserts that in Amended Citation Number 2, Item 1 he “proposed that isolation devices, described in NFPA 654 Section 7.1.4, are feasible to abate the hazards.” (Emphasis added.) (Compl’t’s Post-Hr’g Br., p. 90.) However, this assertion also mischaracterizes the actual language of Amended Citation 2, Item 1, which references “NFPA 654-2000 Chapter 7.1.4.” Thus, the 2000 version of NFPA 654 was the version cited in Amended Citation Number 2, Item 1, which was not identified as a trial exhibit (*see* Compl’t’s Ex. List Attach. Compl’t’s Pre-Hr’g Statement) and was **not offered into evidence** at trial or otherwise designated as part of the record.

Importantly, there is no evidence before the Court as to the contents of the 2000 version of Chapter 7.1.4 of the NFPA 654 and there is no evidence in the record that the 2000 and 2006 versions of Chapter 7.1.4 of the NFPA are substantially the same. As indicated *supra*, the NEP instructs OSHA personnel that when conducting an inspection, in order to obtain evidence of hazard recognition and feasible abatement methods, the NFPA standards listed in Appendix A of that directive should be consulted, and Appendix A includes a reference to the 2006 version of NFPA 654, not the 2000 version. The Court is of course limited to consideration of only the citation as written and the evidence in the record in support thereof, and cannot consider the 2000 version not in the record. As indicated *supra*, the Court may judicially notice a fact that is not subject to reasonable dispute because it “can be accurately and readily determined from sources whose accuracy cannot be reasonably questioned.” Fed. R. Evid. 201(b)(2). Here,

however, the Court cannot judicially notice the 2000 version of NFPA 654 since its accuracy cannot be readily determined from its source by the public.³⁴

Therefore, the Court concludes that any reliance by the Secretary on the 2006 version of Chapter 7.1.4 of the NFPA 654 in support of his assertion that there was a reasonable means of abatement was misplaced since it was not the version cited in Amended Citation Number 2, Item 1. Likewise, Dr. Zalosh opined in his report that NFPA 654-2006 “explicitly requires such isolation devices as listed in paragraph 7.1.4.2”³⁵ and that the “chemical isolation devices included as item (5) in NFPA 654-2006 paragraph 7.1.4.2 were readily available and frequently used on dust collector inlet ducts at other facilities long before the citation was issued.” (Emphasis added.) (C-36, p. 15.) However, for the same reasons, *supra*, the Court concludes that Dr. Zalosh’s reliance on the 2006 version of Chapter 7.1.4 of the NFPA 654 in support of his opinion that there was a reasonable means of abatement was also misplaced.

Citation Number 2, Item 2
Alleged Willful Violation of Section 1910.307(c)(2)

The NEP indicates that in addition to citations under section 5(a)(1), “[o]ther standards are applicable to the combustible dust hazard. For example, if the workplace has a Class II location, then citations under 29 CFR 1910.307 may be issued to those employers having electrical equipment not meeting the standard's requirements.” (C-20, p. 3.) Section 5(a)(2) of the Act mandates that employers “shall comply with occupational safety and health standards

³⁴ See <http://catalog.nfpa.org/NFPA-654-Standard-for-the-Prevention-of-Fire-and-Dust-Explosions-from-the-Manufacturing-Processing-and-Handling-of-Combustible-Particulate-Solids-Prior-Years-P4274.aspx>.

³⁵ The Court notes that section 7.13.1.5 of NFPA 654-2006 indicates that isolation devices shall be provided in accordance with “7.1.4” and not “7.1.4.2” as Dr. Zalosh asserts. (See C-42, p. 18.)

promulgated under this chapter.” 29 U.S.C. § 654(a)(2). The elements of proof for a violation of an OSHA standard differ from the elements of proof for a General Duty Clause violation.

With that in mind, in order to prove a violation of a cited standard, “the Secretary must show by a preponderance of the evidence that (1) the cited standard applies, (2) there was a failure to comply with the cited standard, (3) employees had access to the violative condition, and (4) the cited employer either knew or could have known of the condition with the exercise of reasonable diligence.” *Bardav, Inc., d/b/a Martha's Vineyard Mobile Home Park*, 24 BNA OSHC 2105, 2109 (No. 10-1055, 2014) (citation omitted). However, “[w]hen the standard incorporates hazard as an element of the violation, then the Secretary must show hazard in addition to condition or practice . . . just like the general duty clause.” *Bunge Corp.*, 638 F.2d at 835.

The Secretary alleged in Citation Number 2, Item 2 that Cooper Tire violated 29 CFR section 1910.307(c)(2), the “Hazardous (classified) Locations Standard,” by failing to ensure that its “[e]quipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, approved for the hazardous (classified) location, or safe for the hazardous (classified) location[.]” (Compl. Ex. B, Cit., p. 17.) More specifically, the Secretary alleged that:

- (a) On or about December 7, 2010, on the mezzanine, flexible cords running from an electrical control box did not pass through box fittings that were approved for Class II dust environment.
- (b) On or about December 7, 2010, on the mezzanine, the splice joining a flexible cord to two heat tapes, was not approved for Class II environment.
- (c) On or about December 7, 2010, on the mezzanine, the electric lamp fixtures were not approved for a Class II environment.
- (d) On or about December 7, 2010, on the mezzanine, conduit fittings that were missing cover plates, were not approved for a Class II environment.

- (e) On or about December 7, 2010, on the mezzanine, the defective strain relief was not approved for a Class II environment.
- (f) On or about December 7, 2010, on the 2nd floor, the vacuum cleaner/electric generator mounted on a portable cart, was not approved for a Class II environment.

(Id.)

Section 1910.307(c) provides that “[e]quipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, approved for the hazardous (classified) location, or safe for the hazardous (classified) location.” 29 CFR § 1910.307(c). Further, “[e]quipment shall be approved not only for the class of location, but also for the ignitable or combustible properties of the specific gas, vapor, dust, or fiber that will be present.” 29 CFR § 1910.307(c)(2)(i). The Hazardous (Classified) Locations Standard creates distinct hazardous location classifications, which are assigned to one of the designations “(A)” through “(I).” 29 C.F.R. § 1910.307(a)(2)(i).

Designation “(F)” refers to a “Class II, Division 1” location, which is defined as a location where “combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures;” a location where “mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitable mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, through operation of protection devices, or from other causes;” or a location in which “combustible dusts of an electrically conductive nature may be present.” *(Id.)* Thus, “Class II” locations are those “that are hazardous because of the presence of combustible dust.”³⁶ 29 C.F.R. § 1910.399.

³⁶ Class II locations include the following:

(1) *Class II, Division 1.* A Class II, Division 1 location is a location:

Therefore, since this standard incorporates hazard as an element of the violation, meaning, in accordance with section 1910.399, the cited locations were allegedly “hazardous because of the presence of combustible dust,” the Court concludes that the Secretary must show that the cited locations were actually hazardous because of the presence of combustible dust, i.e., “the Secretary must show hazard in addition to condition or practice.” *Bunge Corp.*, 638 F.2d at 835.

In its post-trial brief Cooper Tire asserts, apparently as an afterthought, that the Secretary cannot enforce section 5(a)(1) as cited in Citation Number 2, Item 1 because a more specific standard, 29 C.F.R. § 1910.307, applied to the cited condition. (Resp’t’s Post-Hr’g Br., pp. 95-98.) Cooper Tire also argues that the Secretary cannot enforce the General Duty Clause as cited “because the hazards alleged by the Secretary in its § 1910.307 and General Duty Clause citations are one and the same” and that section 1910.307 “preempts any citation under the General Duty Clause.” (Resp’t’s Post-Hr’g Br., p. 98.)

Under Commission precedent, preemption by a more specifically applicable standard is an affirmative defense which the respondent must raise in its answer. *See Spirit Aerosystems*,

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- (i) In which combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures; or
 - (ii) Where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitable mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, through operation of protection devices, or from other causes; or
 - (iii) In which combustible dusts of an electrically conductive nature may be present.
- (2) *Class II, Division 2*. A Class II, Division 2 location is a location where:
- (i) Combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitable mixtures, and dust accumulations will normally be insufficient to interfere with the normal operation of electric equipment or other apparatus, but combustible dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment; and
 - (ii) Resulting combustible dust accumulations on, in, or in the vicinity of the electric equipment may be sufficient to interfere with the safe dissipation of heat from electric equipment or may be ignitable by abnormal operation or failure of electric equipment.

(*Id.*) The Court notes that although the Secretary did not assert in Citation Number 2, Item the specific Division allegedly violated, since the Secretary alleged a fire and explosion hazard in the other two citations, it appears that the Secretary is asserting a *Class II, Division 1* violation.

Inc., 10-1697, 2014 WL 7434582, at *14 n . 7 (04 National/Federal Dec. 24, 2014) (since **Spirit** **neither raised this issue as a defense** in its answer nor sought to amend its answer to add it, the argument was waived); *Vicon Corp.*, 10 BNA OSHC 1153, 1157 (No. 78-2923,1981) (describing a claim that a general standard was preempted by a more specific standard as an affirmative defense); *see also* Commission Rules 34(b)(3) and(4), 29 C.F.R. § 2200.34(b)(3) and (4). Here, Cooper Tire neither raised this issue as a defense in its answer nor sought to amend its answer to add it. Therefore, the Court finds that the argument was waived.³⁷ *See Gen'l Motors Corp., Chevrolet Motor Div.*, 10 BNA OSHC 1293 (No. 76-5344, 1982).

At trial, both parties referred to the elements necessary for a deflagration hazard to exist as the “fire triangle,” consisting of (1) an oxidant (air), (2) an ignition source, and (3) fuel (the Secretary contends the carbon black dust is the fuel). (Tr. 15-16, 347-49.) Significantly, the NEP cautions compliance officers that “before a deflagration can occur: (a) the dust has to be combustible[;] (b) the dust has to be dispersed in air or another oxidant, and the concentration of this dispersed dust is at or above the [MEC;] [and] (c) there is an ignition source, such as an electrostatic discharge, spark, glowing ember, hot surface, friction heat, or a flame that can ignite the dispersed combustible mixture that is at or above the MEC.” (C-20, p. 15.)

³⁷ Furthermore, “[a]pplicability of a specific standard will preempt the general duty clause, with respect to conditions or practices *expressly covered by the specific standards.*” (Emphasis added.) *CSA Equip. Co., LLC*, 24 BNA OSHC 1476, 1482 (No. 12-1287, 2014) (citing *Con Agra, Inc.*, 11 BNA OSHC 1141 (No. 79-1146, 1983). Cf. *McNally Constr. & Tunneling Co.*, 16 BNA OSHC 1879, 1883 (No. 90-2237, 1994) (basing its finding of preemption, in part, on a determination that “the two standards are not additive and complementary, but instead directly conflicting”), *aff'd*, 71 F.3d 208 (6th Cir. 1995). *See generally*, *Gade v. Nat’l Solid Wastes Mgmt. Ass’n*, 505 U.S. 88, 98-99 (1992) (instructing that “the provisions of the whole law” guide the determination as to whether the Act preempts a state regulation) (citations omitted). Thus, even if the affirmative defense had been properly asserted, the Court concludes that section 1910.307 complements, but does not preempt, a citation under the General Duty Clause.

The parties agreed that there are five elements necessary for an explosion to occur, referred to as the “explosion pentagon,” consists of the above three “fire triangle” criteria for a deflagration plus a dust cloud (dispersion) at or above the MEC, and (5) confinement. (Tr. 15-16, 346-49.) OSHA relied upon the explosion pentagon outlined in the NEP and the experts agree that the explosion pentagon is the framework to be used to determine the existence of an explosion hazard. (Tr. 348-50; 1685, 1698-02, 1773-74; C-20, p, 15; R-41, p. 9, R-67, p. 3.) The NEP also lists the criteria that must be met before an explosion can occur, combining the elements of a deflagration plus the requirement that the “combustible mixture is dispersed within a confined enclosure (and the confined enclosure does not contain sufficient deflagration venting capacity to safely release the pressures) such as a vessel, storage bin, ductwork, room or building.)” (C-20, p. 15.)

Similarly, section A.3.3.4 of Annex A to NFPA 654 also indicates that a dust explosion requires (1) combustible dust; (2) dust dispersion in air or other oxidant at or exceeding the MEC; (3) ignition source such as an electrostatic discharge, an electric current arc, a glowing ember, a hot surface, welding slag, frictional heat, or a flame; and (4) confinement.³⁸ (See C-42, p. 24.) Section A.3.3.16 also cautions that the MEC “is dependent on many factors, including particulate size distribution, chemistry, moisture content, and shape. . . . *Often, the necessary MEC data can be obtained only by testing.*” (Emphasis added.) (C-42, p. 24.)

³⁸ The Court notes that in *Kelly Springfield Tire Co.*, 1982 WL 917447 (No. 78-4555, 1982) (*aff'd.* in *Kelly Springfield Tire Co. v. Donovan*, 729 F.2d 317 (5th Cir. 1984)), the Commission only required four elements: (1) confined space, (2) oxygen, (3) fuel, and (4) an ignition source. (*Id.* at *4.) However, since *Kelly Springfield* was decided prior to the enactment of NFPA 654, the Court finds that the parties are held to the criteria clearly established in NFPA 654 and agreed upon by the experts in this case in determining the existence of an explosion hazard. Thus, *Kelly Springfield* is not controlling on this point.

Thus, in order for an explosion hazard to exist, such as the alleged carbon black dust explosion hazard cited by the Secretary, all five criteria *must* be present. (Tr. 15; C-20, p. 15.) The Secretary must establish through a preponderance of evidence the existence of each of these elements to show the existence of a fire or explosion hazard. *See e.g., Conagra, Inc.*, 12 BNA OSHC 1357, 1360 (No. 84-0311, 1985) (ALJ) (outlining the necessary elements to create a dust explosion);³⁹ *Foseco, Inc.*, 10 BNA OSHC 1949, 1961 (No. 81-844, 1982) (ALJ) (listing the necessary elements to create a dust explosion); *Luis A. Ayala Colon, Inc.*, 12 BNA OSHC 1533, 1537 (No. 84-624, 1985) (ALJ) (explaining that “mere dust is not ignitable or explosive unless other conditions are present such as correct air mixture, heat, time element ignition source etc.”). Thus, it is undisputed that if a single element of the pentagon is missing, an explosion is not possible. (Tr. 348-350; C-20, p. 15; R-41, p. 9; R- 67, p. 3.)

Hazard Analysis

Cooper Tires argues that “the Secretary failed to show that such a hazard actually, rather than theoretically existed, because he failed to establish that the following four (of the five) elements of an explosion were present: (a) fuel, here, a combustible dust; (b) sufficient dispersion of the dust [at or above] the [MEC]; (c) an ignition source; and (d) confinement.” (Resp’t’s Post-Hr’g Br., pp. 23-24.) “With respect to establishing a combustible dust, Cooper Tire argues that “the Secretary did not even take a sample of the dust in the dust collectors or duct work, and thus, has no evidence a combustible dust even existed there.” (*Id.*, p. 24.) With respect to ignition, Cooper Tire argues that “the Secretary did no more than identify theoretical

³⁹ The Court notes that it is well-settled “that an unreviewed administrative law judge's decision has no precedential value.” *Elliot Construction Corp.*, 23 BNA OSHC 2110, 2120 n. 4 (No. 07-1578, 2012).

ignition sources but there was no evidence that such ignition sources were capable of igniting carbon black dust because the Secretary failed to determine the [MIT or MIE] of the dust.” (*Id.*) With respect to confinement, Cooper Tire argues that “the Secretary failed to present evidence to establish that the enclosures – the dust collectors and duct work – could not withstand a [fire] event, if one were to occur within it.” (*Id.*)

As to the MEC requirement, Anderson did not perform an analysis of the MEC of the Rust sample and Rust admitted, “I don’t know the MEC of the dust sample.” (Tr. 15-16, 215, 346-49.) As indicated *supra*, OSHA’s NEP and NFPA 654 both emphasizes the centrality of establishing the MEC. Thus, the NEP directs Compliance Officers, such as Rust, to ensure that all elements of a fire or explosion are present prior to citing an employer for a combustible dust hazard. (C-20 p. 15.) Although no measurements were taken to determine the MEC or the particulate size distribution, chemistry, moisture content, and shape of the dust in the dust collectors and duct work, the Secretary nonetheless relies on the impermissible opinion testimony of Rust that the dust was present in sufficient loose concentrations and thicknesses, up to five and six inches thick, over enough surface area to create a hazard due to its concentration if suspended. (Compl’t’s Post-Hr’g Br., p. 37; Tr. 210-14, 363, 402; C-20, p. 16).

According to Rust, the combustible dust had accumulated over at least 5 percent of the mezzanine area, and possibly up to about 10 percent of the area considering the combustible dust accumulations on the superstructure and pipes and calculated that, given the surface area covered by combustible dust, the dust would reach a concentration of approximately 94.7 grams per cubic meter of the area, if the dust he observed was dispersed or suspended. (Tr. 215). Thus, Rust opined that there was combustible dust in the cited area that would reach concentrations exceeding the MEC and that ignition sources were present. (Tr. 215, 366). As indicated *supra*,

however, any reliance by the Secretary on Rust's opinion testimony was misplaced since he was not qualified as an expert.

More importantly, the NEP indicates that "small amounts of dust accumulations in isolated spots of the floor or other areas would not normally be classified as a violation of the housekeeping requirement under this NEP[.]" (C-20, p, 21.) Therefore, in "order to substantiate housekeeping violations, [compliance officers] *shall* take representative measurements. Thickness measurements *must* be made at several locations within the sampling area." (Emphasis added.) (*Id.*) Thus, the Court concludes that since Rust failed to take representative measurements, *i.e.*, thickness measurements at several locations within the sampling area, any analysis based upon the Rust sample was unreliable and the opinions based upon that sample were accorded little weight.⁴⁰ Therefore, the Court gives little weight to Rust's conclusion that combustible dust in the cited area would reach concentrations exceeding the MEC and that ignition sources were therefore present since he did not take representative measurements.

At trial, the Secretary's expert, Dr. Zalosh testified that he "was hypothesizing [about] a possible explosion in the dust collector that [he] was concerned about, and the explosion, the flame and the pressure wave, the pressure associated with that explosion traveling back down through the ductwork towards the occupied areas." (Tr. 998.) Similarly, Rust testified that "[i]f a deflagration that occurs in the ductwork where the opening is either going into or out of the system, you could have a -- you would have a ball of fire, potentially a ball of fire that would be expelled from that system." (Tr. 198-99.)

However, in a book co-authored by the Secretary's own expert, Dr. Zalosh admitted that "[i]n the case of combustible dust clouds, relevant explosibility tests include [MIT, MIE and

⁴⁰ See *e.g.*, *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 745 (3d Cir. 1994) (where Third Circuit held that "any step that renders the analysis unreliable . . . renders the expert's testimony inadmissible.") Although not binding, the Court agrees with the Third Circuit's analysis.

MEC]” and opined that the “[r]esults of these tests . . . depend on chemical composition as well as particle size, concentration, moisture level, and the details of the test apparatus.” (Emphasis added.) (R-67, p. 72.) Thus, Cooper Tire argues that “[o]nly after determining a dust’s [MIT, MIE and MEC] would the Secretary have the scientific and factual information necessary to determine if each element of the pentagon was present in the workplace.” (Resp’t’s Post-Hr’g Br., p. 29; *see also* Tr. 348-50, 1698-02, 1773-74; C-20; R-Ex. 41, p. 9; R-67, p. 3.) As further discussed *infra*, however, the Secretary failed to evaluate, much less establish, the properties of carbon black dust as it existed in the Tupelo Plant, and, instead, presumed that the conditions cited created an explosion hazard.

As illustrated, *supra*, by OSHA’s series of classifications, groups, and in some cases OSHA standards, not all dusts capable of combustion create combustible dust hazards. The NEP states that Class II “F” locations include atmospheres “containing combustible carbonaceous dusts that have *more than 8 percent total entrapped volatiles . . . or that have been sensitized by other materials so that they present an explosion hazard.*” (Emphasis added.) (C-20. p. 9.) Likewise, OSHA issued a Letter of Interpretation on November 23, 2004, which reiterated that under certain conditions “carbon black presents no explosion hazard when the volatile *content is eight percent or less*” but “*in combination with any sensitizing material would be considered a Class II, Division I, Group F location.*” (Emphasis added.) (R-43.)

Even Amended Citation Number 2, Item 1 itself provides that “one feasible and useful abatement method to correct the cited hazards is to follow the requirements found in NFPA 654-2006, Chapter 7.13” and section 7.13.1.3 therein indicates that “[a]ir-

material separators shall be protected in accordance with 7.1.2.” In turn, section 7.1.2.1(5) provides that the design of explosion protection for equipment should incorporate one or more of the following methods of protection,” which includes “[d]ilution with a noncombustible dust *to render the mixture noncombustible.*” (Emphasis added.) (C-42, p. 14.)

Thus, even OSHA recognizes that the volatile content of the dust mixture and the identity of other sensitizers are significant in determining whether it is combustible. However, despite this recognition, Anderson did not test, and the Secretary presented no evidence of, the volatile content and identity of the sensitizing material in the Rust sample. (Tr. 352.) Cooper Tire argues, and the Court agrees, that “knowing the composition of the dust at issue is critical to establishing whether a dust hazard exists.” (Resp’t’s Post-Hr’g Br., p. 29; *see also* Tr. 1685; R-41; C-38.)

Significantly, regarding a question posed by the Court concerning “how long it takes for the various dust particles to reach their ignition temperature, *i.e.*, the minimum ignition temperature (MIT) that will ignite a dust cloud, the Secretary’s own expert witness, Dr. Zalosh, opined “*I think that’s the key*, along with some other factors to the question of under what conditions does carbon black present a flash fire and explosion hazard. So, to have a flash fire and explosion hazard, the particles have to be heated up to their ignition temperature although there’s still some flame that creates the hazard.” (Emphasis added.) (Tr. 1065.) “[I]t’s too hard to give an absolute answer to that question without getting into the issue of particle size in the presence of other materials.” (Emphasis added.) (Tr. 1066.)

Dr. Zalosh admitted that “there’s mixtures of different particle sizes, it’s very difficult to

give a simple answer to that question. *And, it's very much dependent on the presence of other small amounts of other combustible materials that might be present, in this case, in the mezzanine.*" (Emphasis added.) (Tr. 1067.) "So, *I think the test data is very important . . .* and I appreciate why people who have been around carbon black for long periods of time and have seen what happens with large pellets, I appreciate why they could have the impression that carbon black is not a flash fire hazard *because of the importance of all the particle sizes and other material effects.*" (Emphasis added.) (*Id.*) Despite these admissions, the Secretary presented no evidence of test data that established the specific ignition temperature or the particle size of the carbon black dust mixture at the Tupelo Plant.

In *Con Agra, Inc., d/b/a Pet Foods Co.*, 11 BNA OSHC 1126 (No. 81-2606, 1983) (ALJ), the Judge held that the Secretary failed to carry his burden to show that dust created an explosion hazard. Similar to the present case, the compliance officer in *Con Agra*, although unfamiliar with the particular product mix that was involved, nonetheless opined that the extruder room was a "Class II, Division 2" based on his review of the ingredients processed at two facilities, and from his observations and photographs taken at one of the facilities. (*Id.* at 1132-33.) The compliance officer also opined that a mixing room was a Class II, Division 2, based upon a "minimal amount of dust in suspension and his observation of dust accumulation on the surfaces at both locations." (*Id.* at 1133.) Since no testing had been performed to determine the composition of the dust, the Judge in *Con Agra* concluded that the Secretary's case was "based on nothing but sheer conjecture and speculation." (*Id.* at 1137.) The Court finds the analysis in *Con Agra* persuasive. Here, as in *Con Agra*, the Secretary performed no testing to determine the

composition or quantity of the carbon black dust mixture at the Tupelo Plant. Instead, like in *Con Agra*, the Secretary again relied purely on speculation rather than fact.

Nonetheless, the Secretary cites *Titan Tire Corp.*, 19 BNA OSHC 1082 (No. 00-0012, 2000) in support of his contention that the carbon black dust present at the Tupelo Plant was combustible. In *Titan Tire*, a section 1910.307 violation was affirmed by the Judge in connection with a flash fire that occurred in Titan Tire's mixing department, where the mixer had been out of service for three months prior to the incident. However, there were a number of factors leading up to the ultimate malfunction and subsequent flash fire at Titan Tire that were not present in the instant case. First, the parties in *Titan Tire* stipulated to the characteristics and quantities of the seven ingredients at issue in and around the mixer, five of which were considered ignitable. However, in the case *sub judice*, there was no such stipulation and the Secretary failed to present any evidence of the characteristics and quantities of the ingredients in the carbon black dust present at the Tupelo Plant at the time of the inspection. In addition, in *Titan Tire*, the mixer had been repeatedly malfunctioning and the operators continued to run the mixer when the ram and dust collector were inoperable, a condition that did not exist in the present case. (*Id.* at 1082-84.) Further, although the Judge in *Titan Tire* assumed the flash fire was caused by carbon black dust, numerous other combustible materials were involved. The Court declines to make the same assumption in the present case without evidence of the specific ignition temperature, particle size, volatile content, and identity of the other sensitizers in the carbon black dust at the Tupelo Plant.

Further, Dr. Meyers reviewed OSHA's case file, Dr. Zalosh's report, and other relevant documents and concluded that although "[t]he citations issued by OSHA are based on the assumption that carbon black is a combustible dust," the Rust sample was "not tested from

specific areas cited by OSHA to determine whether or not the material is a combustible dust and poses a flash fire or explosion hazard.” (R-41, p. vii.) Rather, OSHA tested the single Rust sample from “an area where rubber components, including oil and carbon black were being mixed. Mr. Rust did not collect samples on the 1st, 2nd, or 3rd floors of the facility or from inside [the] cited equipment.” (*Id.*) “OSHA has not performed analysis or further testing to determine how the combustibility of that single sample relates to actual conditions in the facility.” (*Id.*)

Thus, Cooper Tire argues that “the Secretary ostensibly depends upon a single sample of ‘unidentified dust’ taken from a single beam that could ignite in a laboratory setting.” (Resp’t’s Post-Hr’g Br., p. 30; *see also* Tr. 1245-49, 1491-93.) “Taking this speculation further, the Secretary assumes –with no evidentiary basis –that the unidentified and unquantified dust sample is representative of the dust in the duct work and dust collector connected to mixers three and four.” (*Id.*) However, data collected by Cooper Tire indicated that the composition and components of dust in the facility was not uniform. (Tr. 1811-12; C-43.) The Court agrees.

As illustrated in *American Phoenix, Inc.*, 24 BNA OSHC 2228, 2256 (No. 11-2969, 2014), the Secretary cannot assume that the dust collected from an entirely separate location is somehow representative of the conditions in another location involving other equipment. After the trial in the present case, but prior to the filing of the parties’ post-trial briefs, Judge Augustine issued his decision in *American Phoenix*, which became a Final Order of the Commission. Although *American Phoenix, Inc.* is not binding, Judge Augustine’s analysis is well-reasoned and instructive. The *American Phoenix* decision is apposite to the central issues of the instant case and both parties cite to it in their post-trial briefs and reply briefs.

American Phoenix, Inc. manufactures “soft rubber compounds for large-scale, industrial companies, including all of the major North American tire companies, retread companies, belting

companies, tread operations, and some automotive parts.” *Am. Phoenix, Inc.*, 24 BNA OSHC at 2230. American Phoenix used a series of Banbury Mixers to manufacture its products, which handled large, 1,200 pound batches of basic compounds, such as polymers, oil, and Carbon Black. Each mixer was attached to a dedicated dust collector. (*Id.*) OSHA conducted an inspection of American Phoenix’s facility, focusing on the dust collectors. OSHA took seven dust samples—three from the floor near dust collectors, two from dust collectors, and two from the ductwork connected to dust collectors. OSHA sent the samples to the SLTC, where they were tested for Class II explosibility (K_{st}), and Pressure Ratio. The test results indicated that all of the samples except one were combustible. (*Id.* at 2228.)

As in the present case, in *American Phoenix* SLTC did not test for MIE, MEC, or MIT. (*Id.* at 2228.) Based on the samples, the Secretary cited each of the dust collectors. However, as Judge Augustine noted, “they were presumed to contain combustible fuel without measurements being performed” notwithstanding that American Phoenix used “as many as 50 different recipes, with each recipe containing varying amounts of ingredients.” (*Id.* at 2245.) Judge Augustine found that:

Although some of the recipes contained similar ingredients, no evidence has been proffered to show that the particular mix found in one dust collector would be the same as another. Absent such evidence, the Court gives little weight to the attempt of the Secretary to meet its burden of proof by arguing that dust collected, but not tested, from one dust collector was interchangeable with dust collected and tested from another dust collector.

(*Id.*) Thus, Judge Augustine vacated portions of the citation that alleged the existence of an explosion hazard, concluding that:

[T]he primary problem for [the Secretary] is one of proof. The general duty clause requires proof of the existence of a hazard. According to the agreed-upon criteria for a dust explosion, [the Secretary] failed to prove a critical element to establish the hazard—the MEC [citation omitted]. [The Secretary] could have inquired as to the different rubber recipes and taken more representative samples.

In this case, it was not enough to show that combustible dust existed in the dust collectors or that some of the elements for a dust explosion are present. In the absence of a specific standard, which often presumes a hazard if certain conditions are met, [the Secretary] is forced to cite based on the general duty clause. *See Bunge Corp.*, 638 F.2d 831 (5th Cir. 1981). The general duty clause, though, places a higher burden on [the Secretary] because he must prove elements that are otherwise assumed when an employer is cited pursuant to a specific standard under section 5(a)(2). In this case, [the Secretary] failed to meet that burden.

(*Id.* at 2249.)

The Secretary's proof in the instant case is even more lacking than in *American Phoenix* since in that case, OSHA obtained seven samples and most of the samples were taken from the ductwork and dust collectors. In the present case, however, Rust took only one sample and took no samples from the cited ductwork. Dr. Meyers testified that he had concerns regarding how representative a single dust sample taken from the mezzanine superstructure could be for the entire facility: "There's been a lot of discussion about the combustibility of the dust in the dust collector or in the ductwork sample. If you want to know the explosion hazard of that material, that's where you would collect the sample." (Tr. 1764.)

Therefore, Cooper Tire disputes the relevance of the analysis of the Rust sample to the cited conditions because "the Secretary assumes—with no evidentiary basis—that the unidentified and unquantified dust sample is representative of the dust in the ductwork and dust collector connected to mixers three and four." (Resp't's Post-Hr'g Br., p. 30.) The Secretary counters with an argument regarding what the dust sample "likely" indicates. "The [Rust] sample from the mezzanine superstructure near Mixers 3 and 4 is directly relevant to the dust mixtures that the dust collector system for Mixers 3 and 4 are *likely* to handle and the fugitive dust *likely* to be present on the mezzanine level surfaces and other Mixing Department surfaces in the vicinity of Banbury Mixers 3 and 4, which extend from the second floor, through the mezzanine,

to the first floor.” (Emphasis added.) (Compl’t’s Post-Hr’g Br., p. 73.)

Dr. Zalosh similarly presumed the contents of the dust in all areas of the Mixing Department could be derived from the single sample collected by Rust. “I do think Mr. Rust’s sample is closely related to the predominant materials used in the Mixing Department, which are carbon black, some oil residue, and maybe some others.” (Tr. 1147.) When asked if he knew the MIE required to ignite the dust in the dust collector for Mixers 3 and 4, Dr. Zalosh responded, “I presume that those materials could be in the dust collectors for Mixers 3 and 4, and that that calculation for other materials could be done. I haven’t done any additional calculations.” (Tr. 1188.) However, Rust conceded at trial that, along with carbon black dust, the “dust is going to come from the powders, the oils, whatever is put into the mixture itself.”⁴¹ (Tr. 310.) Rust admitted that “we don’t really know the composition. It probably is not carbon black, not in a pure state that is a combustible dust, but it is a sample that I took and sent off to the lab, and it’s listed as a combustible dust. I make reference to the carbon black dust, but it’s a mixture.” (Tr. 150.)

Surprisingly, the Secretary argues that Cooper Tire’s challenge to the composition of the Rust sample “has no bearing on whether the material is a combustible dust” and that “regardless of composition, the dust tested as an explosive, Class II dust [.] Moreover, [Cooper Tire] is, of course, fully aware of the ingredients used in its Mixing Department.” (Compl’t’s Post-Hr’g Br., pp. 71-72.) The Secretary also argues that “[a]ccording to Material Safety Data Sheets (MSDS) for carbon black handled at [Cooper Tire’s] Tupelo plant, carbon black was identified as an ‘ST1’ dust, and a ‘risk of dust explosion’ was identified with the warning ‘Do not create a dust cloud by using a brush or compressed air.’ (C-13, pp. 3, 4).

⁴¹ This statement contradicts Rust’s deposition statement that the dust sample he took from the superstructure of the mezzanine was pure carbon black dust “not mixed with anything.” (Tr. 310.)

The Court finds no merit in the Secretary's arguments. Dr. Zalosh testified the Rust sample was "the basis for determining that there's a combustible dust hazard." (Tr. 1141.) Further, the MSDS for carbon black by itself is not dispositive since the Secretary failed to present any evidence of the other materials in Cooper Tire's recipes, their proportional amounts, or their MSDS. As the NEP states, it is not a Class II "F" location unless it contains "combustible carbonaceous dusts that have more than 8 percent total entrapped volatiles . . . or that have been sensitized by other materials so that they present an explosion hazard. (See C-20, p. 9; C-42, p. 14; R-43.) "The literature and applicable guidance, including OSHA's 2004 Letter of Interpretation and NEP, all state that, in order for carbon black dust to become a combustible dust hazard, it must be mixed with other sensitizing material or volatiles in amounts in excess of 8% of the total" or "have been sensitized by other materials so that they present an explosion hazard." (Resp't's Post-Hr'g Br., p. 33; C-20. p. 9; *see also* R-43.)

Thus, the Court agrees with Cooper Tire that since it is the Secretary's burden of proof with respect to the alleged violation, "it was incumbent on the Secretary to establish that the dust at issue had sufficient volatile content in order to be hazardous" or had been sensitized by other materials so that they present an explosion hazard. (Resp't's Post-Hr'g Br., p. 113.) "These issues were both definable and measurable according to the Secretary's own witnesses. Yet, the Secretary made no attempt to determine the carbon black dust's volatile content or that it contained sensitizers sufficient to cause it to be ignitable in tire-making production" (*Id.*).

Dr. Zalosh also opined that the most serious hazard associated with Citation 2 Item 1 was the "lack of deflagration isolation devices in the dust collector inlet ducting drawing dust from the two Banbury mixer charging areas." (C-36, p. 15.) According to Dr. Zalosh, "[t]he isolation device is designed to interrupt the propagation of a flame and accompanying pressure rise before

it can reach the dust pickup locations where it can endanger personnel and ignite other explosions and fires.” (*Id.*) Thus, Dr. Zalosh opined that the ducting connecting Banbury mixer charging areas to the roof mounted dust collectors “can indeed experience an explosion/deflagration that originates in the collector or possibly in the Banbury itself” since the ducting did not have any readily available explosion isolation devices to prevent this propagation, and since such propagation would endanger personnel frequently situated near the Banbury charging area inside the mixing department[.]” (*Id.*, p. 16.) However, the Court notes that Dr. Zalosh’s analysis again defined the hazard in terms of the method of abatement, and as indicated *supra*, “[a] workplace hazard cannot be defined in terms of a particular abatement method.” *Otis Elevator*, 21 BNA OSHC at 2208.

Further, the Court credits Dr. Meyers’s disagreement with Dr. Zalosh’s opinion, since there was “no evidence that the material handled by these systems [was] explosible. Samples of material were initially not tested from the specific areas cited.” (R-41, p. 43.) “The OSHA citations were originally based on testing performed by OSHA at Tupelo on a single sample taken by Mr. Rust in an area where rubber and carbon black were being mixed, which would have been contaminated by other combustible materials.” (*Id.*) “That material is not expected to be representative of the material handled in the cited equipment.” (*Id.*) Although “Dr. Zalosh expressed concern about the lack of explosion isolation in ducts between Banbury mixers 3 and 4 and dust collectors, Dr. Zalosh has not established that the material being transported by this duct is a combustible dust or ignitable by ignition sources in the facility.” (*Id.*)

Dr. Meyers also credibly testified the ignition sources at the Tupelo Plant were incapable of igniting carbon black dust. “Some of the testing we’ve looked at here, some of the more traditional laboratory testing, the references, we’ve talk about the MSDSs, we’ve talked about the

high ignition energy, the high ignition temperature, the difficulty of igniting carbon black. So, most of the typical industrial ignition sources can't ignite carbon black.” (Tr. 1811.) Even assuming, *arguendo*, that the SLC laboratory conditions were comparable to conditions on the mezzanine, which they were not, Cooper Tire argues, and the Court agrees, that “the Secretary did not establish (1) what level of energy or minimum temperature would be necessary in order to ignite carbon black in an industrial setting or (2) what ignition sources were strong enough and in close-enough proximity to be a plausible source of ignition.” (Resp’t’s Post-Hr’g Br., p. 113; *see also* Tr.380, 1791-92, 1793-98; R-61.)

The Secretary also claimed that the carbon black dust at issue was allegedly conductive because carbon black, with a volatile content above 8%, was classified as a Group F dust. (*See* Compl’t’s Post-Hr’g Br., pp. 11-12; Tr. 47-48, 50-51, 89.) However, since the Secretary failed to test the Rust sample to determine whether it was conductive, Cooper Tire argues, and the Court agrees, that this claim is unsupported by any objective evidence. (Resp’t’s Post-Hr’g Br., p. 113.) Therefore, the Court agrees with Cooper Tire that the single data point derived from the SLTC’s test of the Rust sample, of unknown composition, was inadequate to establish that the Rust sample was combustible. (*Id.*)

Absence of Previous Incidents of Dust Explosion

It is undisputed that there is no record of a carbon dust explosion incident having occurred at any Cooper Tire facility or in the tire manufacturing industry at large. Cooper Tire argues, that “neither Cooper Tire – in its 100-year history – nor the entire tire-making industry has ever experienced a carbon black dust explosion.” (Resp’t’s Br., p. 6; *see also* Tr. 1739-40, 1766-68; R-41, pp. 8-9.) “This is in stark contrast to grain dust and sugar dust, both of which have well-documented histories of explosions, and both of which, not coincidentally, involve

dusts that are highly ignitable (unlike carbon black dust).” (*Id.*)⁴² However, generally, the absence of a history of incidents is irrelevant to whether a violation exists. *Monitor Constr.*, 16 BNA OSHC 1589n. 8 (No. 91-1807, 1994).⁴³

The issue in the present case, however, is not whether a violation existed but whether there was even a *hazard* involved. The Court of Appeals for the D.C. Circuit recently held that previous incidents of explosion are a significant factor in determining whether a dust should be classified as combustible, *i.e.*, classified as a hazard. In *Nat'l Oilseed Processors Ass'n v. Occupational Safety & Health Admin.*, 769 F.3d 1173, 1179, 1183 (D.C. Cir. 2014), the D.C. Circuit held that OSHA’s Standard Interpretation issued on December 27, 2013, the *Classification of Combustible Dusts under the Revised Hazard Communication Standard* (2013 Guidance), informed employers how to determine whether dusts in their workplaces were combustible. The D.C. Circuit found that the “2013 Guidance advises *that previous incidents of explosion will be the best indication of a combustible dust hazard*, but employers may use alternative classification methods depending on the available information from laboratory testing, published test results, or particle size, using either of two size standards.” (Emphasis added.) *Id.*, 769 F.3d at 1184. Thus, the D.C. Circuit found, in accordance with the 2013 Guidance’s directives, that prior incidents of explosion are the *best indication* of whether a dust

⁴² See also, Final Rule on Grain Handling Facilities, 49 Fed. Reg. 49592, 49594-95 (Dec. 31, 1987) (adding 29 C.F.R. §1910.272 and Appendices A, B and C to § 1910.272) (“Fires and explosions have occurred in grain handling facilities for many years, and such occurrences have been reported for almost two centuries”).

⁴³ See, e.g., *Allis-Chalmers Corp. v. OSHRC*, 542 F.2d 27, 31 (7th Cir. 1976) (“The decision of the Commission [to affirm the cited item despite no history of accidents] finds additional support in the declared purpose of the Occupational Safety and Health Act, which is “to assure so far as possible every working man and woman in the Nation safe and healthful working conditions.” 29 U.S.C. s 651(b). “The keystone of the Act in short is preventability.” *Brennan v. Occupational Safety & Health Rev. Comm’n*, 513 F.2d 1032, 1039 (2d Cir. 1975). Actual death or injury are certainly not a prerequisite to establish a violation. *Brennan v. Butler Lime and Cement Company*, 520 F.2d 1011, 1017 (7th Cir. 1975). “One purpose of the Act is to prevent the first accident.” *Lee Way Motor Freight, Inc. v. Secretary of Labor*, 511 F.2d 864, 870 (10th Cir. 1975).

is combustible.⁴⁴ *Id.*, 769 F.3d at 1183.

The Court finds the D.C. Circuit's analysis in *Nat'l Oilseed Processors Ass'n* persuasive. In the present case, in light of the lack of persuasive laboratory test results establishing that the dust at issue is combustible, the Court finds that the laboratory test results of the Rust sample are inconclusive, particularly since the Secretary failed to establish the MEC of the dust sample, which is one of the criteria for establishing a fire hazard. Further, the Court concludes that the absence of dust fire or explosion incidents at Cooper Tire's facilities or at any other tire manufacturing facilities involving carbon black dust is additional evidence that the dust was not combustible.

In *Cargill, Inc.*, 1980 WL 10556 (No. 78-4071, 1980) (ALJ), Judge Mitchell explained that “[s]ince the Secretary has alleged that the locations covered by these two Items were Class II, Division 1 locations, the Secretary must establish just that.” (*Id.* at *13.) “[P]roof by the Secretary that there was [dust] in the air, without any showing of the extent of concentration of that dust, is not enough to establish the existence of the violations described in these two Items as existing in Class II, Division 1 locations. The Secretary must go further and prove that the suspended [] dust was of such a concentration as to be an explosive mixture. There is no such proof in this record.” (*Id.*) Although not binding in this case, the Court finds the *Cargill* analysis instructive, and as *Cargill* also illustrates, the Secretary must affirmatively demonstrate that the carbon black dust mixture at the Tupelo Plant was in fact present in sufficient quantities and concentration to be combustible.

Likewise, in *Nat'l Coal Museum*, 19 BNA OSHC 1748, 1761 (No. 99-2240, 2001) (ALJ),

⁴⁴ The 2013 Guidance is available on OSHA's website at www.osha.gov. The Court takes judicial notice of the Standard Interpretation. The 2013 Guidance states, “[f]or combustible dusts, often the best information is actual experience with the product. If the classifier knows that its product has been involved in a [fire] or dust explosion event, the classifier should classify the product as a combustible dust, unless the classifier can show that the conditions surrounding the event are not expected in normal conditions of use or foreseeable emergencies.”

Commission Judge Welsch held that there was no violation of section 1910.307 since “the record [did] not show the potential for the suspension of coal dust in the tour area.” The Court notes that coal dust, like carbon black, with volatile content above 8%, is generally classified as a Group F dust, and that Group F dusts are considered semi-conductive. (*See* C-20; R-30; R-67.) In *Nat’l Coal Museum*, the violation was vacated because the Secretary failed to establish the combustible level of coal dust and failed to show that it was potentially explosive because of the unprotected light bulbs. *Nat’l Coal Museum*, 19 BNA OSHC at 1761-62. Although not binding in this case, *Nat’l Coal Museum* also illustrates that, even where the dust at issue may be conductive, the Secretary still must establish a hazard in order to sustain a section 1910.307 violation.

The parties, for reasons best known to them, chose not to adduce evidence establishing the ingredients of the Rust sample. However, the Secretary has the burden of proof and he not only failed to adduce the composition of the Rust sample, he failed to take a dust sample from the ductwork for Banbury Mixers 3 and 4 “to determine the identity, composition, or the quantity of dust in the ductwork of Mixers 3 & 4 that existed at the time of the inspection.” (Resp’t’s Reply Br., p. 2.) The Secretary contends the Rust sample taken from the mezzanine superstructure is a logical stand-in for the dust that was actually in the cited ductwork.⁴⁵ (Compl’t’s Post-Hr’g Br., p. 73.) However, even the Secretary’s expert, Dr. Zalosh, did not share his speculative viewpoint, opining that “[s]ince there are a lot of materials used in the Mixing Department, I don’t have a way of relating Mr. Rust’s samples to all the other materials used in the Mixing Department.” (Tr. 1147.) He conceded, “I have not tried to calculate the

⁴⁵ Again, the Secretary relied on Rust’s speculation that the dust “accumulations had likely settled over a period of time from equipment leaks” and that “accumulations that have occurred incrementally over a period of weeks or months are more likely to be representative of the dust and materials typically present in the area.” (Compl’t’s Post-Hr’g Br., p. 73.) The Court gives little weight to the Secretary’s position since he relied on this lay witness’s speculative opinion.

quantitative amount of material on the bags in the dust collector.” (Tr. 1185.)

The Secretary’s witnesses insist that all they need to establish a Class II location is to show the mere presence of a dust with an explosion severity index above 0.5. (Tr. 205-06, 686-87, 1127.) While this may be the expedient approach adopted by the SLTC Laboratory, it is neither warranted by scientific data nor the applicable regulations. Such an analysis completely ignores the plain language of the standard that, “locations . . . are classified depending on the properties of the flammable vapors, liquids or gases, or combustible dusts or fibers that may be present therein and the likelihood that a flammable or combustible concentration or quantity is present.” 29 C.F.R. § 1910.307(a).

Most importantly, as indicated *supra*, the Secretary relied on the purported K_{st} value to support his allegation that the carbon black dust at the Tupelo Plant was combustible. However, despite the ASTM admonition that extrapolation was not appropriate, Anderson did exactly that when he extrapolated the K_{st} value from the data obtained from the Class II test, which was obtained in a 1.2 liter Hartmann vessel, even though Appendix E protocol instructs that the K_{st} test should be conducted in a 20-liter vessel. Therefore, the Court concludes that the reported K_{st} value was not reliable.

Further, the Court credits Dr. Meyers’s expert testimony regarding what a worksite where carbon black dust exceeded the MEC would actually look like, which, the Court concludes, shows that the carbon black dust conditions at the Tupelo Plant at the time of the inspection did *not* exceed the MEC:

The MEC of the carbon black is approximately 50 grams per cubic meter in a number of different MSDSs. There are some rules of thumb about the concentration of dust that the MEC is, like if you held your hand in front of you, you wouldn't be able to see your hand at that concentration, or there's a 25-watt light bulb two meters away, six feet away, you wouldn't be able to see the light bulb through those concentrations of dust. So, those

concentrations are much higher than what you would have in a normal work place. People don't work in those environments. That's not a concentration of dust out where people are working. Unless there's some severe upset, OSHA has a permissible exposure level for carbon black of 3.5 milligrams per cubic meter so that factors over 10,000 times lower than the MEC. So, the concentrations where the dust starts to be a breathing hazard are much lower than concentrations for an explosion hazard.

(Tr. 1702-03.) Here, the record is void of *any* evidence from Rust's inspection that "if you held your hand in front of you, you wouldn't be able to see your hand at that concentration, or there's a 25-watt light bulb two meters away, six feet away, you wouldn't be able to see the light bulb through those concentrations of dust." Therefore, the Court concludes that the Secretary failed to establish that the carbon black dust was at or above the MEC. Thus, the Court agrees with Cooper Tire that "the Secretary has utterly failed to establish the hazardous properties of the dust or the likelihood that a flammable or combustible concentration or quantity was present on the Mezzanine of Cooper Tire's Tupelo facility." (Resp't's Reply Br., p. 117.)

Citation Number 1, Items 2a and 2b
Alleged Serious violations of Section 1910.22(a)(1)
(General Housekeeping Standard)

The general housekeeping standard provides in paragraphs (1) and (2) that "[a] places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition[,]" and that "[t]he floor of every workroom shall be maintained in a clean and, so far as possible, a dry condition." 29 CFR § 1910.22(a)(1), (2). Further, "[w]here wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable." 29 CFR § 1910.22(a)(2). The Commission has held that "the housekeeping standard is not limited to tripping and falling

hazards, but may be applied to [a] significant accumulation of combustible dust.” *Con Agra, Inc. v. Occupational Safety and Health Review Comm’n*, 672 F.2d 699, 702 (8th Cir. 1982), citing *Bunge Corp. v. Secretary of Labor*, 638 F.2d at 834, which reached the same conclusion. *See also, Phoenix Roofing, Inc. v. Dole*, 874 F.2d 1027, 1034 (5th Cir. 1989) (noting that *Bunge Corp.* had considered a violation of housekeeping regulations that “presented the hazard of a possible explosion”).

According to the NEP, “[i]n situations where the . . . lab results indicate that the dust is combustible, and the combustible dust accumulations . . . are extensive enough to pose a deflagration, explosion, or other fire hazard, then citations under 29 CFR 1910.22 (housekeeping) . . . may generally be issued.” (C-20, p. 3.) Further, if “the surface dust accumulations (i.e., dust accumulations outside the dust collection system or other containers, such as mixers) can create an explosion, deflagration or other fire hazard, then citations for violations of 29 CFR 1910.22 (housekeeping) shall be issued.” (*Id.*, p. 20.) Thus, the NEP indicates that citations for violations of 1910.22(a)(1) shall be issued when the levels of dust accumulations “exist in places of employment (except floors of workrooms and storage areas), passageways, and service rooms, *in such depths that they can present explosion . . . or other fire hazards.*” (Emphasis added.) (C-20, p. 21.) The NEP also indicates that citations for 1910.22(a)(2) shall be issued when the levels of dust accumulations “exist on the floors of workrooms *in such depths that they can present explosion . . . or other fire hazards.*” (Emphasis added.) (*Id.*)

In Citation Number 1, Item 2a, the Secretary generally alleged that Cooper Tire committed serious violations of the general industry housekeeping standard, 29 C.F.R. § 1910.22(a)(1), because “[p]lace(s) of employment were not kept clean and orderly, or in a

sanitary condition[.]” (Compl. Ex. A, Cit., p. 7.) More specifically, the Secretary asserted that on or about December 7, 2010, “on the mezzanine by mixer number 4, the carbon black dust measured 1/8 to 3/16 inches thick on electrical boxes and controls” and “3 to 4 inches thick on the overhead superstructure and metal framework where the dust sample was taken.” (*Id.*) The Secretary also alleged that “[o]n the same metal structure within 6 feet of the dust sample, the carbon dust was 5 to 6 inches deep.” (*Id.*) Further, the Secretary asserted that on or about December 7, 2010, on the mezzanine “by mixer numbers 2 and 3, the carbon black dust had covered the cooling fins on electrical motors and the motor’s fan guard openings” and “at the mezzanine level, the pipes, conduits, and ventilation pipes, the carbon black dust was 1/8 to 3/16 inches thick.” (*Id.*) In Citation Number 1, Item 2b, the Secretary alleged that Cooper Tire violated 29 C.F.R. § 1910.22(a)(2) because the “[f]loor(s) of workroom(s) were not maintained, so far as possible, in a clean condition[.]” More specifically, the Secretary asserted that on or about December 7, 2010, “by the roller dyne extruder, the carbon black dust had accumulated from 5 to 6 inches thick around the base of the extruder.” (*Id.*, p. 8.)

At trial, when asked what the nature of the hazard cited was in these two items, Rust stated that it was “based upon a hazard of creating or being part of a fire hazard that burns because of the dust.” (Tr. 156.) He stated the accumulations of dust “could be a fire hazard . . . material catching on fire and burning.” (Tr. 182). However, the NEP indicates that it “should not be construed to interfere with the application of 1910.22 or other housekeeping standards to the uncleanliness of workplaces unrelated to the combustible dust hazard.” (C-20, pp. 21-22.)

The Fifth Circuit held that “[t]he existence of a hazard is not always an element [] of the Secretary's burden of proof for showing violation of an OSHA standard.” *Bunge Corp.*, 638 F.2d at 835. “When the violative element is only a condition, hazard is presumed, and the Secretary

need only show the existence of the violative condition and worker exposure to the condition” since “the housekeeping regulation goes only to proscribed conditions and does not address hazards.” (*Id.* at 835, 836.) “The type of hazard [] is irrelevant to whether some condition or practice constitutes a violation of this regulation . . . the hazard is presumed and is relevant only to whether the violation constitutes a ‘serious’ one.” (*Id.* at 834.) “Condition is what gives rise to a violation here.” (*Id.*)

Here, notwithstanding Rust’s opinions that Citation Number 1, Items 2a and 2b were based upon a fire hazard, as indicated *supra*, no specific hazard was alleged in the violative description of Item 2a or 2b, i.e., the violative element alleged was only a condition. Therefore, the Court concludes that the hazard is presumed and in order for the housekeeping standard to apply in the present case, the Secretary is not required to prove that the dust accumulation was actually a combustible dust hazard, but need only prove that the proscribed condition or practice existed (*i.e.*, that the cited areas were not kept clean and orderly and in a sanitary condition . . . and that the cited workroom floor was not maintained in a clean and, so far as possible, a dry condition). Nonetheless, given Rust’s admission that the alleged hazard was a fire hazard, the existence of a fire hazard is relevant to whether the alleged housekeeping violation constituted a “serious” one. As indicated *supra*, the Court has concluded that the Secretary failed to establish any hazard and therefore, any alleged housekeeping violation, if proven, was not “serious.”

As to the merits of the alleged housekeeping violation, Rust testified that any accumulation of dust greater than a 32nd of an inch was a *per se* violation of the Housekeeping Standard. (Tr. 183, 211-12, 214-16.) Likewise, Dr. Zalosh testified that Cooper Tire failed to comply with the Housekeeping Standard because it allegedly allowed accumulations of carbon black to exceed 1/32nd of an inch. (Tr. 1022-23.) Thus,

Dr. Zalosh opined in his report that the fugitive dust accumulations he saw in Rust's inspection photographs and described in Citation Number 1, Item 2(a) "represent a clear departure from the NFPA 654 requirements in Section 8.2.1[.2] Fugitive Dust Control General Housekeeping and in Section 6.2.3 Use of Separation to limit dust fire or explosion hazards."⁴⁶ (C-36, p. 14.) "Paragraphs 6.2.3.1 and 6.2.3.2 *define the hazardous area to be where dust accumulation thicknesses exceed 1/32 Inch (0.8 mm) scaled up by the ratio of the reference bulk density value (75 lb/ft³) to the actual dust bulk density.*" (Emphasis added.) (*Id.*)

Paragraph 8.2.1.2 of NFPA 654 indicates that "[r]egular cleaning frequencies shall be established for walls, floors, and horizontal surfaces, such as equipment, ducts, pipes, hoods, ledges, beams, and above suspended ceilings and other concealed surfaces, to minimize dust accumulations within operating areas of the facility." (C-42, p. 19.) The NEP also references Annex D of NFPA 654 and indicates that Annex D "contains guidance on dust layer characterization and precautions. It indicates that immediate cleaning is warranted whenever a dust layer of 1/32-inch thickness accumulates over a surface area of at least 5% of the floor area of the facility or any given room."⁴⁷ (C-20, p. 16.) It also indicates that "[r]ough calculations show that the available surface area of bar joists is approximately 5% of the floor area *and the equivalent surface area for steel beams can be as high as 10%.*" (*Id.*)⁴⁸ Rust testified that "these were actually steel beams so I think there's justification to go as high as ten percent." (Tr. 214.)

⁴⁶ Dr. Zalosh's report incorrectly referenced Section 8.2.1, which provides that "Equipment shall be maintained and operated in a manner that minimizes the escape of dust." The correct citation should have been Section 8.2.1.2.

⁴⁷ Section D.1 of Annex D actually states that "[d]ust layers 1/32nd in. (0.8 mm) thick can be sufficient to warrant immediate cleaning of the area[.]" (C-42, p. 39.)

⁴⁸ Significantly, the NEP states that "the material in Annex D is an idealized approach based on certain assumptions, including uniformity of the dust layer covering the surfaces, a bulk density of 75 lb/ ft³, a dust concentration of 0.35 oz./ft³, and a dust cloud height of 10 ft. Additionally, FM Data Sheet 7-76 contains a formula to determine the dust thickness that may create an explosion hazard in a room, when some of these variables differ." (C-20, p. 16.)

However, Dr. Meyers opined that although the photographs taken by Rust from the Tupelo Plant show local accumulations at some elevated surfaces, “OSHA has not provided any calculation or estimate of the fraction of the horizontal area that was covered with dust.” Thus, according to Dr. Meyers, “OSHA did not supply sufficient information about the extent of dust accumulations to evaluate if an unacceptable hazard exists.” (R-41, pp. 36, 38.) The Court agrees. Since the Secretary failed to establish that a dust layer “of 1/32-inch thickness accumulate[d] over a surface area of at least 5% of the floor area of the facility or any given room” or that the equivalent surface area for the steel beams exceeded 10%, he likewise failed to establish that the accumulations were capable of creating a hazardous condition.

Further, as indicated *supra*, Rust collected only one dust sample from one of the five areas cited in Citation Number 1, Items 2a and 2b and failed to take any samples of the dust in the ductwork and dust collector, which were cited in Citation Number 2, Item 1. However, the sampling protocol described in Appendix E of the NEP required testing of three to five dust concentrations, from 500 g/m³ to about 2500 g/m³, for each sample. (See C-20, p. 39.) The testing was *not* performed per this protocol since only one sample was provided by Rust to the SLTC. Therefore, the Court concludes that any analysis based upon the single Rust sample was unreliable and any opinions based upon that sample were of little value. *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 745.

Significantly, Cooper Tire also argues, and the Court agrees, that “the Secretary cannot rely on NFPA 654 to show Cooper Tire acted unreasonably if it allowed carbon black dust to accumulate more than 1/32nd of an inch because at the time of the time of the inspection, no such explicit proscription was contained in that standard.” (Resp’t’s

Post-Hr'g Br., p. 141.) As explained by Dr. Myers, in "NFPA 654, the only place that referenced 1/32nd of an inch wasn't in the section that described whether or not you had an explosion hazard. It was in a section that talked about how to separate areas with a hazard from a non-hazard and the quantity of dust you could have over some distance if you're trying to use segregation of areas to separate the areas."⁴⁹ (Tr. 1807-09.)

Significantly, in the Secretary's post-trial brief he cites to Rima's testimony that "NFPA 654 *applies* to [Cooper Tire's] facility because it handles combustible dust in its manufacturing process" and that NFPA 654 "*applies* to 'all phases' of "manufacturing, processing, blending, pneumatic conveying, repackaging, and handling of combustible particulate solids or hybrid mixtures, regardless of concentration or particle size, where the materials present a fire or explosion hazard." (Emphasis added) (Compl't's Post-Hr'g Br., p. 39; Tr. 202).

However, at the time that NFPA 654 became relevant for tire manufacturing, "Cooper Tire's Tupelo facility either existed or was approved for construction." (Resp't's Post-Hr'g Br., p. 64.) Therefore, Cooper Tire argues that "because Chapter 7 is not applied retroactively to existing equipment, the terms of Chapter 7 do not apply to the Cooper Tire's Tupelo facility." (*Id.*, pp. 64-65.) In response, the Secretary argues that "where the authority having jurisdiction determines that the existing situations presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively any portions of this standard deemed

⁴⁹ Dr. Myers's opinion is supported by the NFPA 654's Proposed Tentative Interim Amendment (TIA) No. 1 020 on January 4, 2011, where the NFPA 654 Committee indicated that "[w]hile many people use the 1/32 in. dust layer thickness criterion as a basis for determining the presence of a dust deflagration hazard, the existing text in the body of NFPA 654 does not provide sufficient guidance on the proper use of this criterion." (R-70, p. 8.) "In fact, the only reference to this layer thickness in the current body text is in a section that specifically addresses hazardous area separation distances." (*Id.*) The NFPA 654 committee also recognized that the current edition "also lacks a definitive statement establishing what constitutes an 'explosion hazard', which establishes the basis for numerous requirements in the document." (*Id.*, p. 9.) However, since the TIA was not implemented until January 11, 2011, and did not exist at the time of the inspection, the Court also agrees with Cooper Tire that the Secretary cannot rely on any formula provided in the TIA to NFPA 654 since Cooper Tire did not and could not have had knowledge of that formula.

appropriate.” (*Id.*, pp. 39-40) (*Citing* C-42, p. 8.) The Secretary asserts that he is an “authority having jurisdiction,” citing in his post-trial brief to Annex A of NFPA 654:

The phrase ‘authority having jurisdiction,’ or its acronym AHJ, is used in NFPA documents in a **broad manner**, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau; **labor department**, or health department; building official; electrical inspector; or others having statutory authority.

(Emphasis in original) (Compl’t’s Post-Hr’g Br., p 40) (*Citing* C-42, pp. 23-24). The Secretary further notes in his post-trial brief that “OSHA has held itself out as an AHJ as defined by the NFPA.” (Compl’t’s Post-Hr’g Br., p. 90 n. 11.)

However, in *American Phoenix*, the Secretary took a contrary position when American Phoenix argued that the NEP “in effect, creates a substantive rule that required employers to comply with the [NFPA 654].” *Am. Phoenix, Inc.*, 24 BNA OSHC at 2234. In that case, the Secretary argued that “the NEP does not require Respondent to do anything; rather, it ‘simply provides guidance to OSHA Area Offices on how to determine whether an employer, upon inspection, is in violation of the General Duty Clause’” and that with respect to NFPA 654 the NEP only states that it “should be consulted to obtain evidence of hazard recognition and feasible abatement methods.” *Id.* The Secretary’s position in *American Phoenix* comports with Commission precedent that voluntary industry standards may be cited as evidence of *industry recognition of the cited hazards*. See, e.g., *Cargill, Inc.*, 10 BNA OSHC 1398, 1403 (No. 78-5707, 1982) (*vacating* ALJ’s ruling that NFPA 61B was not acceptable proof of industry recognition of hazards associated with grain dust and grain-handling equipment and noting that construction of employer’s facility before effective date of consensus standard had “no bearing

on its relevance to industry awareness” of hazards); *Kokosing Constr. Co.*, 17 BNA OSHC 1869 (No. 92-2596, 1996) (holding that voluntary industry codes may be used to demonstrate industry recognition).

However, the Court notes that “standards should aim toward correction rather than mere inquiry into possible hazards.” *Louisiana Chem. Ass'n v. Bingham*, 657 F.2d 777, 782 (5th Cir. 1981). Thus, “[a] standard performs the function of correcting or ameliorating a particular hazard, which the Supreme Court has defined as a “significant risk[.]” *Id.*, 657 F.2d at 783 (citing *Industrial Union Dept. v. American Petroleum Institute*, 448 U.S. 607 (1980)). However, if the basic function of NFPA 654 is to “address[] ... a specific and already identified hazard,” and it is “not a purely administrative effort designed to uncover violations of the Act,” then it “is a standard.” *Chamber of Commerce of U.S. v. U.S. Dep't of Labor*, 174 F.3d 206, 209 (D.C. Cir. 1999) (quoting *Louisiana Chemical Ass'n v. Bingham*, 657 F.2d 777, 782 (5th Cir. 1981)).

“[T]he distinction between substantive and procedural rules is ‘one of degree’ depending upon ‘whether the substantive effect is sufficiently grave so that notice and comment are needed to safeguard the **318 *6 policies underlying the APA.’” *Elec. Privacy Info. Ctr. v. U.S. Dep't of Homeland Sec.*, 653 F.3d 1, 5-6 (D.C. Cir. 2011) (citing *Lamoille Valley R.R. Co. v. ICC*, 711 F.2d 295, 328 (D.C.Cir.1983)). “Our cases “make clear that an agency pronouncement will be considered binding as a practical matter if it either appears on its face to be binding, or is applied by the agency in a way that indicates it is binding.” *Elec. Privacy Info. Ctr.*, 653 F.3d 7, (citing *Gen. Elec. Co. v. EPA*, 290 F.3d 377, 383 (D.C.Cir.2002) (internal citation omitted)). *See also Chamber of Commerce*, 174 F.3d at 212–13). Since the Secretary is now arguing that NFPA 654 “applied” to the Tupelo Plant and that Cooper Tire was “required” to comply with it and that OSHA was an “authority having jurisdiction” with the authority to enforce it, NFPA 654 is now

a standard “aimed towards correction rather than mere inquiry into possible hazards.” The Court therefore concludes that the Secretary has impermissibly transformed this “purely administrative effort to uncover violations” into a new standard. Accordingly,

ORDER

IT IS HEREBY ORDERED THAT for all the reasons indicated *supra*, the remaining citations and proposed penalties are **VACATED**.

SO ORDERED THIS 17th day of March, 2015.

/s/

JOHN B. GATTO, Judge
U.S. Occupational Safety And
Health Review Commission