SECRETARY OF LABOR, Complainant, v. TRINITY INDUSTRIES, INC., Respondent.	OSHRC Docket No. 95-0455

DECISION

Before: WEISBERG, Chairman; ROGERS, Commissioner.

BY THE COMMISSION:

At issue in this case is whether Administrative Law Judge Nancy Spies erred in finding that the hopper railcars produced at Trinity Industries, Inc.'s Bessemer, Alabama plant contain permit-required confined spaces ("permit spaces") under 29 C.F.R. § 1910.146. For the reasons that follow, we affirm the judge's decision.

I. BACKGROUND

Trinity Industries, Inc. is a large manufacturing company with approximately 200 plants located throughout the United States. About 20 of the plants are involved in manufacturing railcars. The Bessemer plant produces new hopper railcars, each of which is approximately 40 feet long and 12 feet wide and is divided into either three or four compartments. At the bottom of each compartment is a discharge opening that ranges in size from 2 feet by 6 feet to 4 feet by 6 feet, depending upon whether the opening is to be fitted with an auger or a gate. These openings are approximately 2 to 3 feet above the floor of the

plant. In addition to the bottom opening, there are two smaller openings at the top of each compartment.

On some hopper railcars, Trinity applies a lining to the interior of the compartments to protect the railcar from the product it will carry or to protect the product from the railcar. Trinity varies the chemical composition of the lining material depending on the railcar's intended cargo. The three employees involved in the lining process simultaneously apply the lining to two of the railcar's three or four compartments, and then line the remaining compartments. The employees attach an exhaust duct to one of the top compartment openings and a light to the other. The exhaust duct draws fresh air up through the bottom discharge opening through the compartment and out the top at a rate of 2100 to 2300 cubic feet per minute. At this rate, the air in the compartment is exchanged every 40 to 60 seconds. Each of two employees (the "liners") works in his own hopper compartment while the third employee (the "mixer") remains outside to ensure that the lining material flows continuously and to help with the equipment. The liners wear Tyvek coveralls, rubber gloves, booties, and hoods to protect their skin, face, eyes and clothing from the overspray generated in the compartment. The liners breathe through air-fed respirators and the mixer breathes through a cartridge respirator. Each liner enters a hopper compartment by crawling through a discharge opening. The liners use spray guns to apply the lining material and stand on scaffolding erected inside the compartment to spray the upper portion. In order to spray the remaining lower portion, the liners stand through the car's bottom opening with their feet on the floor below. They must proceed at a steady and uninterrupted pace so that the lining cures properly. The lining process takes approximately 10 to 12 minutes per compartment.

In October 1994, Occupational Safety and Health Administration ("OSHA") Industrial Hygienist Horace McCann conducted a scheduled general inspection of the Bessemer plant. McCann observed two employees simultaneously lining separate interior compartments of

a three-compartment hopper railcar with a flammable epoxy liner.[1] He tested the combustibility of the atmosphere by using a calibrated instrument to take several readings of the Lower Explosive Limit ("LEL").[2] He placed the instrument at the lip of each of the two compartment bottom openings and took several measurements while the liners were spraying inside. The trial exhibit on which McCann marked the precise test locations shows that his readings were taken within the circumference of the bottom openings at a position level with their inside bottom edge. McCann did not enter a hopper compartment itself or hold the instrument further up inside it. His measurements at each opening ranged from 24 to 26 percent of the LEL. He also took measurements 5 feet away where there were 8 to 10 open 5-gallon buckets of coating materials. Measurements at that point ranged from 4 to 16 percent of the LEL. Finally, he took measurements approximately 15 feet from the hopper discharge openings and measured between 4 to 6 percent of the LEL. He was assured by the Bessemer plant manager and the foreman that the conditions he saw and tested were normal operating conditions. Based on his readings, McCann determined that the cited work area was a permit space. On that basis, the Secretary of Labor ("Secretary") cited Trinity for several violations of the permit space standard. Trinity contested the citations.

Following a hearing, the judge determined that the hopper railcar compartments were permit spaces. She noted that the parties do not dispute that the cited compartments were

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[1]The employees used "Sigma HSV Epoxy Coating" and "Thinner 91-92" to line the compartment. The flammability classification of the epoxy coating and the thinner is Class 1B, the second most flammable classification.

[2]The LEL is the minimum concentration of vapor in air or oxygen below which propagation of flame does not occur on contact with a source of ignition. A mixture below the LEL is too lean to burn or explode. *See* NFPA No. 325M-1969, *Fire-Hazard Properties of Flammable Liquids, Gases and Volatile Solids* (1969), published by the National Fire Protection Association. The permit space standard uses the term Lower Flammable Limit ("LFL"), which is equivalent to the LEL.

confined spaces[3] but instead dispute whether the requirements of the permit space standard apply. Based on the cited standard's definition of a permit-required confined space, the judge found that McCann's LEL readings of 24 to 26 percent at the compartment openings established that a hazardous atmosphere existed inside. The judge found that taking readings from the lip of the compartment opening is an acceptable method to show the atmosphere inside that compartment because the ventilation system pulled the air from outside the compartment, and that the main source of the volatile vapors came from spraying the lining

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[3]The definitions are as follows:

§ 1910.146 Permit-required confined spaces.

. . . .

(b) *Definitions.*

. . . .

Confined space means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and

(3) Is not designed for continuous employee occupancy.

. . . .

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

(1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);

. . . .

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

(1) Contains or has a potential to contain a hazardous atmosphere;

(2) Contains a material that has the potential for engulfing an entrant;

(3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

(4) Contains any other recognized serious safety or health hazard.

material inside the compartment. The judge found that Trinity violated several provisions of the permit space standard.[4] In its petition for review of the judge's decision, Trinity does not challenge the merits of each permit space citation item or their characterization as serious violations but instead focuses on the threshold issue of whether the cited hopper railcar contained permit spaces.

II. DISCUSSION

We conclude that McCann's readings establish that the compartments have a "potential" to contain a hazardous atmosphere within the meaning of the standard. We agree with the judge's finding that McCann's readings at the lip of the opening were predictive of the volatility of the atmosphere existing inches away inside the compartment. The railcar lining process introduced flammable vapor inside the compartments which was controlled through forced-air ventilation and necessitated that employees wear protective clothing and breath through respirators. Trinity's former Corporate Safety Director Jerry Riddles described the compartments as similar to a "small paint booth" and stated that the spraying of the liner created "a lot of overspray within the car." According to McCann's readings, the highest concentrations of flammable vapors, over twice what the standard permits, occurred at the

[4]The judge affirmed the following permit space citation items: Citation 1, Item 2, alleging a serious violation of 29 C.F.R. § 1910.146(c)(2) for failing to inform exposed employees of the existence, location and danger of permit spaces; Citation 1, Items 3b, alleging a serious violation of 29 C.F.R. §1910.146(d)(3)(iii) for failing to plan for and develop procedures necessary for purging, inerting, flushing or ventilating the permit space as necessary to eliminate or control atmospheric hazards; Citation 1, Item 3c, alleging a serious violation of 29 C.F.R. § 1910.146(d)(3)(v) for failing to have written procedures in place for verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry; Citation 1, Item 4b, alleging a serious violations of 29 C.F.R. § 1910.146(d)(5)(ii) for failing to test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations; and Citation 1, Item 4c, alleging a serious violation of 29 C.F.R. § 1910.146(d)(10) for failing to develop and implement a system for the preparation, issuance, use, and cancellation of entry permits as required by this section.

compartments' lips. These concentrations decreased as McCann sampled further from the opening, demonstrating, as the judge found, that the main source of the flammable vapor detected at the rim was likely from the spraying inside the compartment.

Trinity challenges McCann's readings, arguing that vapor from inside the hopper would have been undetectable outside because the ventilation system was designed to bring in air through the bottom. As evidence of such air flow, it alleges that the increased concentration of fumes at the railcar opening resulted from nearby open paint cans. The source of the fumes, however, does not affect our conclusion that McCann's tests were predictive of the atmosphere inside the railcar. Regardless of its source, the fact remains that a hazardous atmosphere existed just "inches away" from the inside of the compartments within the circumference of the bottom railcar openings in which employees stood while spraying the lower portion of the cars, and through which they would have to exit in the event of an explosion.

Moreover, Trinity's own safety personnel testified that it was possible that ventilation system problems could have caused McCann's results. Trinity's former Corporate Safety Director Riddles suggested that the exhaust system may not have been working properly or that particulate from the liner materials could have built up in the interior exhaust ducts or on the fan blades, decreasing air flow. Corporate Manager of OSHA Compliance Curtis Chambers testified that an employee's failure to change the filter on the exhaust duct could have contributed to McCann's high LEL reading.[5] Also, there is no evidence to support Trinity's argument that "fresh air" would have sufficiently diluted the flammable vapor inside the compartments to a concentration below 10 percent of the LEL.

[5]Both Riddles and Chambers testified that McCann could get a high reading if one of the liners sprayed down towards the instrument. However, McCann testified that there was no evidence of overspray on the instrument.

Trinity also challenges McCann's measurements' accuracy by citing to testimony on its own hopper railcar tests. Trinity's former Corporate Safety Director Riddles,[6] its Divisional Safety Manager Ron Bush,[7] and its Corporate Manager of OSHA Compliance Chambers[8] all testified that they had tested inside hopper railcars numerous times and had never obtained any readings that exceeded 10 percent of the LEL. However, despite this testimony, Trinity did not provide any written documentation of its results. Moreover, the standard here requires that a permit space contains *or has a potential to contain* a hazardous atmosphere. McCann's several consistent readings well in excess of the LEL, conducted under what Trinity's management admitted to be normal operating conditions, clearly show that the potential exists for the space to contain a hazardous atmosphere. Trinity's test results, which are completely undocumented and lack specificity as to time and conditions, simply

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[6]Riddles worked for Trinity from 1976 until 1990, several years before the inspection at issue here. He had designed the ventilation system used to ventilate the interiors of the hopper railcars during the lining process, and would visit all of Trinity's plants to ensure that the system was working properly. During his tenure, he tested "hundreds"of railcars at all of Trinity's plants for hazardous atmospheres, with up to 60 railcars at the Bessemer plant alone. He started his testing at the lip of the bottom opening and then he would stand up into the railcar and test while lining was underway, and his readings of the concentration of flammable mixture in the air never exceeded 10 percent. Based on these results, Riddles determined that the hopper railcars were not permit spaces.

[7]At the time of the inspection, Mr. Crane, the Bessemer plant manager, informed McCann that Trinity did not consider the hopper railcars to be permit spaces and supported their claim with a letter dated June 9, 1994, from Ron Bush to Wayne Hacker, the interim plant manager. The letter states that "[a]s a result of testing twenty (20) hopper railcars for 'Immediately Dangerous to Life or Health' . . . they are to be classified as nonpermitted confined spaces. The Enfet 80 CGS atmospheric tester gave no negative readings for oxygen, flammability or toxicity." The letter does not contain any information specific to test results, such as the type of lining tested, atmospheric conditions, or the operational status of the ventilation system.

[8]Curtis Chambers, the current corporate manager of OSHA compliance for Trinity, also testified that he tested hopper railcars at the Bessemer plant during the lining process and had always found the LEL to be under 10 percent. He also went out to the plant the week before the hearing to test a hopper railcar himself and measured below 10 percent of the LEL.

cannot rebut this finding. We therefore conclude that the interior compartments of the hopper railcars are permit spaces. The Secretary's evidence of flammable vapor well in excess of 10 percent of its LEL at lower openings establishes that the compartments have "a potential to contain a hazardous atmosphere."

Lastly, we reject Trinity's argument that even if permit spaces existed, Trinity was eligible for alternative procedures under 29 C.F.R. § 1910.146(c)(5).[9] Under these alternative procedures, Trinity would not need to comply with paragraphs (d) through (f) and (h) through (k), which includes the provisions it was cited under, if it can demonstrate that it met *all* of

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[9]The standard provides as follows:

§ 1910.146 Permit-required confined spaces.

. . . .

(c) *General requirements*.

. . . .

(5) An employer may use the alternate procedures specified in paragraph (c)(5)(ii) of this section for entering a permit space under the conditions set forth in paragraph (c)(5)(i) of this section.

(i) An employer whose employees enter a permit space need not comply with paragraphs (d) through (f) and (h) through (k) of this section, provided that:

(A) The employer can demonstrate that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;

(B) The employer can demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space for safe entry;

(C) The employer develops monitoring and inspection data that supports the demonstrations required by paragraphs (c)(5)(i)(A) and (c)(5)(i)(B) of this section;

(D) If an initial entry of the permit space is necessary to obtain the data required by paragraph (c)(5)(i)(C) of this section, the entry is performed in compliance with paragraphs (d) through (k) of this section;

(E) The determinations and supporting data required by paragraphs (c)(5)(i)(A), (c)(5)(i)(B), and (c)(5)(i)(C) of this section are documented by the employer and are made available to each employee who enters the permit space under the terms of paragraph (c)(5) of this section; and

(F) Entry into the permit space under the terms of paragraph (c)(5)(i) of this section is performed in accordance with the requirements of paragraph (c)(5)(ii) of this section.

the procedures' requirements listed under §§ 1910.146(c)(5)(i)(A) through (F). While Trinity argues that it met some of these requirements, it does not argue that it met all of them. In addition, the record does not support a finding that Trinity met all the requirements. For example, Trinity does not argue, nor is there any evidence to establish, that it complied with paragraph (c)(5)(i)(F), which requires that entry into the permit space was performed in accordance with the requirements of paragraph (c)(5)(ii). We therefore cannot find that Trinity is eligible for alternative procedures. *See Peavey Grain Co.*, 15 BNA OSHC 1354, 1359, 1991-93 CCH OSHD ¶ 29,533, p. 39,873 (the party claiming an exception has the burden to prove it comes within the exception).[10]

III. CONCLUSION

For the reasons above, we affirm the judge's finding that the cited hopper railcars contain permit spaces. On review, neither party has challenged either the characterization of the violations as serious or the appropriateness of the penalties assessed.[11] Accordingly, we

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[10]Under Rule 92(a) of our Rules of Procedure, 29 C.F.R. § 2200.92(a), the issues to be decided on review are within the discretion of the Commission but ordinarily will be those stated in the direction for review, those stated in the petitions for discretionary review, or those stated in any later order. In its opening brief to the Commission, Trinity raises for the first time an argument that was neither raised in its petition for discretionary review nor specified in the directed for review or briefing order: whether the Secretary established that Trinity knew, or with the exercise of reasonable diligence, could have known, of the permit space violations. Based on the record, we find no reason to depart from that policy, nor does Trinity provide us with one. Therefore, we will not disturb the judge's findings. *See Tampa Shipyards, Inc.*, 15 BNA OSHC 1533, 1535 n.4, 1991-93 CCH OSHD ¶ 29,617, p. 40,097 n.4 (No. 86-360, 1992) (consolidated).

[11]The Secretary proposed a penalty of $1700 for Serious Citation 1, Item 2 and the judge assessed a penalty of $1000; the Secretary proposed a group penalty of $1700 for Serious Citation 1, Items 3a-3d and the judge assessed a penalty of $1000 for Items 3b and 3c; the Secretary proposed a group penalty of $1700 for Items 4a - 4c and the judge assessed a group penalty of $1250 for Items 4b and 4c; and the Secretary proposed a penalty of $1700 for Item 5 and the judge assessed a penalty of $1500.

find no reason to disturb the judge's determination that the violations were serious and we affirm the total penalty of $4,750 she assessed for the confined space items.

/s/
Stuart E. Weisberg
Chairman

/s/
Thomasina V. Rogers
Commissioner

Dated: January 27, 1999

SECRETARY OF LABOR, Complainant,	:	
v.	:	OSHRC Docket No.: 95-455
TRINITY INDUSTRIES, INC., Respondent.	:	

Appearances:

Marsha Semon, Esquire
Office of the Solicitor
U. S. Department of Labor
Birmingham, Alabama
For Complainant

Robert E. Rader, Jr., Esquire
Rader, Campbell, Fisher & Pyke
Dallas, Texas
For Respondent

Before: Administrative Law Judge Nancy J. Spies

DECISION AND ORDER

Trinity Industries, Inc. (Trinity) contests a serious citation issued to it on February 28, 1995. The citation resulted from an Occupational Safety and Health Administration (OSHA) inspection by industrial hygienist, Horace McCann. After securing a warrant, McCann returned to Trinity's Bessemer, Alabama, plant on October 25, 1995, to begin a general-scheduled program inspection of the facility (Tr. 9). McCann requested that the walkaround inspection begin at the raw material end and follow though the manufacturing process to the finished product. Trinity's general manager, its superintendent (Mr. Crane), its safety director, and an employee representative accompanied McCann during all or part of the inspection (Tr. 10-12, 14).

The resulting citation asserted 17 grouped violations.[12] The Secretary's remaining allegations are that Trinity violated 10 provisions of the confined space entry program, §1910.146 (items 1 through 5); that it violated standards §1910.254(d)(9)(iii) and 1910.303(b)(1) (items 8 and 9) prohibiting use of electrical cords with exposed conductors; that it violated §1910.303(f) requiring that disconnecting means for electrical equipment be labeled (item 10); that it violated the requirements of §1910.305(a)(4)(v) prohibiting use of flexible electrical cords in specified circumstances (item 11); that it violated §1910.305(b)(2) by failing to cover electrical switch boxes (item 13); that tension was transmitted to joints and terminal screws of electrical cords in violation

[12] The Secretary's complaint amended items 1, 3a - 3 c, 4a - 4c, and 13 by altering the description of the violation or by changing the standard allegedly violated. At the hearing, the Secretary withdrew items 6, 7, 12, and 17(a) - 17(c) (Tr. 5).

of §1910.305(g)(2)(iii) (item 14); that non-explosion proof junction boxes were used in violation of §1910.307(b) (item 15); and that chemical storage tanks were not appropriately labeled in violation of §1910.1200(f)(5)(ii) (item 16). Trinity denies the allegations.

Alleged Violations of Confined Space Standard

It is undisputed that the hopper car compartment is a confined space, *i.e.*, it is an area with the size and configuration to allow a person to enter, with limited means of ingress and egress, but which is not designed for continuous employee occupancy. The parties' disagreement is whether the more restrictive "permit required confined space" (permit space) requirements apply.

Background

Trinity is a large corporation with an integrated system of 200 manufacturing plants located throughout the United States (Tr. 328). The corporation is organized into divisions, such as maritime, structural steel, and railcar. The plant at Bessemer, Alabama, is part of the railcar division. Trinity's railcar division manufactures tank and hopper railcars. Finished railcars may be "lined" or unlined. To "line" a railcar means to spray the interior of the car with a specifically formulated coating. Trinity contracted out its lining work until 1985, when it acquired the contracting company and began lining the cars as part of its own operation. Twenty of Trinity's plants are involved in some aspect of either manufacturing or of lining railcars (Tr. 216, 221). Trinity lines both new and refurbished tank cars and hopper cars. Refurbished cars present hazards which are not present when new cars are lined. The Bessemer plant lines only newly manufactured hopper cars (Tr. 224).

Hopper cars are 40 feet long and approximately 12 feet wide (Tr. 284, 286). Each hopper car is divided into compartments or chambers. A compartment wall extends the full width of the railcar to form either three or four individual chambers. Most typically, hopper cars have four compartments. However, at the time of the inspection, employees were lining a three-compartment car. There are two openings in the top of each compartment, or six or eight openings per car, depending on whether it is a three or a four-compartment car. Each compartment has a "gate opening" at the bottom of the car, where the cargo is discharged. The gate opening extends down from the base of the car in a funnel-like extension (Exh R-1; Tr. 227, 238). Eventually, some gate openings will be capped by gates and others will be capped by augers. The bottom opening is 2 feet by 6 feet, if intended for an auger cap, and 4 feet by 5 feet, if for a gate cap. Since the gate or auger is installed at the end of the manufacturing process, the bottom aperture is always open while a compartment is lined (Tr. 225-227).

The Lining and Ventilation Process

The chemical composition of the lining depends on the railcar's intended cargo. The lining protects a product, such as grain or other food stuffs, from contamination by contact with the railcar. Or the lining is formulated to protect the railcar from damage through contact with the product, such

as when an acidic product is hauled (Tr. 216-217). Even for cars in the first category, there can be significant differences in the formulation of the coating, depending on the intended cargo. Lining materials often contain methyl ethyl ketone (MEK), toluene, and xylene (Tr. 288). The coating sprayed during McCann's inspection included isobutyl alcohol, xylene, wrhyl benzene, toluene, and MEK (Exhs. C-1-3; Tr.19-21, 288). Solvents in each specialized lining mixture serve their own function. According to Trinity, the proper composition of the solvents, application, and drying procedure for various linings is "a science" (Tr. 217, 269).

Employees line railcars in an assembly-line like process. If one compartment is improperly lined or cured, the linings of all the compartments must be blasted out and then relined. In that event, Trinity sells the hopper cars at a loss. For this reason, the lining process follows a steady and uninterrupted pace. When the railcar is rolled into the lining area, three employees (two "liners" and a "mixer") begin set-up procedures. Work always proceeds simultaneously in two compartments, unless it is a three-compartment hopper where the single remaining compartment is lined last (Tr. 32, 217-219).

The ventilation system consists of a series of overhead ducts and pipes. When a car is ready to be lined, employees fit a ventilation duct hose into one of the two openings in the top of the compartment. Before fitting this hose, Trinity's procedure requires employees to change the hose's filter. Employees place a light in the second aperture. The ventilation system pulls the air through the duct, causing fresh air to flow into the bottom of the hopper chamber, through the compartment, and out the ventilation duct (Tr. 15, 306, 330).

Employees enter the hopper compartment through the bottom gate opening. They position a tubular frame along the interior sides of the compartment and then lay an 8 to 10-inch aluminum plank across the tubular frame. The plank serves as a work platform for spraying the upper areas of the compartment (Tr. 241, 316, 331). Once spraying begins, liners briefly stop only to remove the work platform. They continue to spray the lower portion of the compartment by standing on the ground. Finally, the liners lie down and roll out from the bottom of the car (Exh. C-8 at 794-804; Tr. 117-118). A compartment can usually be lined in 10 to 12 minutes (Tr. 303).

Personal Protective Equipment

Before spraying, the liners don protective coverings (disposable "Tyvec" suits, hoods, gloves and boots). They utilize full air-line respirators. The mixer wears a cartridge respirator (Exh. C-8; Tr. 21-22).

Trinity's Pre-inspection Tests of the Hopper Cars During Lining

When Trinity first acquired the railcar lining operation in 1985, Jerry Riddles, its corporate safety, environmental, and worker's compensation director until 1990, evaluated the lining and curing process in each of the plants which lined railcars. The hopper car ventilation system had to be fine-

tuned to achieve uniform drying for the lining. Riddles also attempted to eliminate atmospheric hazards without affecting the curling process. He did not attempt to correlate the chemical composition of the particular lining with the test results, because his goal was to assure that the ventilation system ran at the correct speed (Tr. 231-233, 254-255). Whenever Riddles came to the Bessemer plant during this time, he would test two railcars. In total, he estimated that he monitored at least 60 cars at the Bessemer plant (Tr. 273, 289). Using direct reading instruments such as the Velometer, or Enmet CGS 80 and 90R, he checked the atmosphere inside the railcar compartments for volatility and oxygen deficiency. He took readings from the lip of the compartments as well as inside of them (Tr. 229, 290-291). Riddles recorded the readings so that he could compare them against a baseline figures which he kept at Trinity headquarters. He recalled that during these visits to Bessemer covering a period of 5 years, none of his readings registered over 10 percent of the LEL. Based on his tests, Riddles concluded that the ventilation system should move the air at 2100-2300 cubic feet per minute (which exchanged the air in the compartments every 40 - 60 seconds). This being so, there was no oxygen deficiency during the lining procedure. In the end, Riddles concluded that the ventilation system was capable of properly drying the lining while controlling atmospheric hazards (Tr. 237-239, 252).

Discussion

A "Permit Required Confined Space"

Was the hopper compartment a permit confined space? A permit space is a confined space with: (1) hazardous atmospheres, (2) materials which could engulf an entrant, (3) hazardous internal configurations, or (4) other recognized serious safety or health hazards (§1910.146(b)). The Secretary primarily argues that under (1), the hopper compartment contained or had a potential to contain a "hazardous atmosphere" during lining operations.[13] The standard defines "hazardous atmosphere" as:

> an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

[13] To the extent the Secretary argues for "permit space" coverage under (3) or (4), the argument is rejected. Although the lower area of the hopper compartment may have had "inwardly converging walls" which "taper to a smaller cross-section" at the gate, this portion was too small and too accessible to constitute a "hazardous" internal configuration. Similarly, the Secretary merely speculated that the process presented a recognized health hazard under (4), which, in any event, Trinity effectively contradicted.

(1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL) [or LEL][14];

. . .

(3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit;

NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

(5) Any other atmospheric condition that is immediately dangerous to life or health [IDLH].

A fire or explosion in the confined space of the hopper car would unquestionably expose employees to the "risk of death, incapacitation, . . . or acute illness." The Secretary relies on McCann's flammability tests to meet the definition of subparagraph (1) of the hazardous atmosphere test, *i.e.,* that the compartments contained quantities of flammable gases or vapors "in excess of 10 per cent of its [LEL]."[15]

McCann's Atmospheric Tests

McCann observed liners simultaneously spraying in two compartments. The mixer remained outside the railcar to provide the liners with an uninterrupted supply of material for spraying (Tr. 27). McCann used a calibrated[16] Microguard instrument to take the following readings:

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[14] The "lower flammability limit" or LFL is more commonly referred to as the "lower explosion limit" ("LEL").

[15] Contrary to the Secretary's half-hearted assertion, subparagraph (1) is the only definition arguably met. At hearing, McCann proposed that (3) applies because the hopper cars may be oxygen deficient before lining operations begin. He based this conclusion on a Trinity document which stated, "tank cars and hopper cars may have oxygen deficiency in them" (Tr. 41). The quoted reference did not relate to Bessemer's newly manufactured hopper cars (Tr. 227-28). Tests showed no oxygen deficiency. Nor are (4) or (5) applicable. McCann conducted personal sampling for various air contaminants. Of these contaminants, xylene registered closest to its permissible exposure limit (PEL) but, after computing for the analytical error, it did not exceed it (Tr. 37). There was no proof of IDLH conditions (Tr. 231).

[16] McCann is an experienced hygienist. Calibrating equipment is one of the basic tasks to be performed before monitoring. McCann's testimony and demeanor was that of a capable professional. His assurance that he properly calibrated the equipment is not discredited simply because he failed to mark on his notes that he had done so (Tr. 25, 145-146).

- At the lip of the gate opening for *each* of the two compartments where the liners were spraying, McCann's readings ranged from 24 to 26 percent of the LEL. McCann did not enter the hopper compartment itself or hold the instrument inside it (Tr. 28-29).

- Five feet from the gate opening, the mixer had eight to ten opened 5-gallon buckets lined up against the side of the railcar. McCann's readings at that point ranged from 4 to 16 percent of the LEL (Tr. 154-155).

- Moving approximately 15 feet from the hopper openings, McCann's readings ranged from 4 to 6 percent of the LEL (Tr. 29, 156).

McCann maintained that since the LEL readings decreased the further he moved from the gate openings, the source of the volatile atmosphere most likely came from the openings (Tr. 154). The readings at the lip area of each of the two compartments were substantially the same (Tr. 26). If these readings can be found to pertain to the atmosphere inside the compartment, and if they are accurate, the Secretary has established the existence of a "hazardous atmosphere."

Trinity disputes McCann's readings. First, it objects to the fact that the readings were not taken from inside the compartment but only at the lip. It posits that the instrument may have been placed within the overspray, or that it picked up vapors from a number of opened buckets of lining material, thus artificially inflating the reading. Secondly, it questions the readings because they were higher than Trinity's own readings taken at other times. Neither argument invalidates McCann's readings.

Taking readings from the lip of the chamber gate is an acceptable method to show the volatility of the atmosphere inside that compartment. The ventilation system pulled the air from outside the chamber, past the lip, and into the chamber. Thus, the number of opened 5-gallon buckets of lining material may have contributed to a greater volatility in the "make up" atmosphere and may partially explain the elevated readings (Tr. 291). It does not negate them.

The main source of the volatile fumes came from spraying the lining material inside the chamber (Tr. 154). Although the sprayed product may produce vapors heavier than air (Exh. C-1), the atmosphere at the chamber lip would not ordinarily have a higher volatility than the atmosphere inside the chamber. Further, like McCann, Riddles took readings at the lip of the compartment (Tr. 290). Even though Riddles took additional readings inside the car, the fact remains that tests at the lip were predictive for the volatility of the atmosphere existing only inches away inside the compartment. Trinity only speculated that McCann's Microguard instrument could have been placed in the overspray. The instrument showed no signs of overspray (Tr. 28). The fact that both compartments registered similar readings further diminishes Trinity's hypothesis.

Trinity also argues that McCann's readings must be in error because its own previous LEL readings did not exceed 10 percent. Factors such as the size of the compartment, the volatility of

the specific lining mixture or whether the air filters were recently changed may affect the LEL levels (Tr. 274, 279, 291). Riddles detailed another possible explanation for McCann's elevated readings (Tr. 275):

> Q: Now, you said you might tell them to, quote, "go in and clean their system out."
>
> A: Well, they might have paint particulate buildup on the interior hoses -- these are the exhaust duct hoses -- or on the fan blades. And the air movement, through ducting, you lose some due to what is called air flow friction across the surface of the exhaust system.
>
> If you start having a lot of paint buildup, one, you could have a restricted flow; two, you create more friction for that air to move and when you create more friction, the less air the system can move. If you have paint particulate buildup on the blades of the exhaust fans themselves, that will decrease the efficiency of the system.
>
> So the velometer readings, which I kept records of, our base line was to make sure that we were maintaining a clean operating system for our purposes of reporting to state agencies on air ignitions, like the Bessemer and Jefferson County Air Control Board.

A significant number of environmental factors may further affect the tests results for volatility. Atmospheric pressure and temperature are two main considerations (Tr. 31, 174). Trinity did not correlate its tests for each of the different lining formulations it used (Tr. 269, 274). Thus, it is unknown even whether Trinity tested in a three-compartment car or for the particular lining material OSHA tested.

Finally, since there were no written procedures covering activities which could affect LEL levels, there is less assurance that work procedures followed during Trinity's earlier tests were likewise followed in October 1994. Trinity allegedly also had an oral procedure which would prevent buckets of lining material from being prematurely opened. This oral procedure was not followed during any of the three days McCann inspected the interior lining department (Tr. 336). Other oral work procedures, such as changing the air filter each time a compartment was lined, may also have been ignored.

Trinity could have presented more persuasive evidence. It is noted that Trinity requires its corporate safety director to be part of the OSHA walkaround party. Trinity has its own testing equipment and expects its safety personnel to know how to use it (Tr. 12, 276). Trinity certainly had no obligation to take its own readings during OSHA's inspection, and no negative inference is drawn from the fact it did not. Here, however, given the variability of conditions which affect LEL levels in the hopper cars, contemporaneous testing could have afforded greater weight to Trinity's argument that its earlier and subsequent tests, not McCann's, were correct.

McCann's tests are determined to be valid and representative of the atmosphere inside the hopper compartment. His readings of 24 to 26 percent of the LEL establish a "hazardous atmosphere." Unless Trinity demonstrates that an exception applies, the hopper compartment must be classified as "permit space."[17]

"Alternate Procedures"-- Forced Air Ventilation

Trinity strongly contends that its hopper cars were not permit space because it met the "alternate procedures" exception of §1910.146(c)(5)(I). Section 1910.146(c)(5)(I) authorizes an employer to use "alternate procedures" than those specified for full permit entry, if (among other things) it can demonstrate that (1) the only hazard is an actual or potential atmospheric hazard and (2) that continuous forced air ventilation *alone* is sufficient to maintain the space safe for entry. Contrary to Trinity's argument, the section does not offer a blanket exemption. It merely permits use of alternate means for complying with certain paragraphs of the standard, of relevance here only to paragraph (d). Under §.146(c)(5)(I) a permit space continues to be classified as a permit space (§1910.146(c)(7)). An employer must develop supporting monitoring and inspection data which is both available and verifiable to "demonstrate" (1) and (2). The data and documents must then be made available to each employee operating under "alternate procedures." As the proponent of the exception, Trinity bears the burden of persuasion on the issue.

Initially, Trinity's work *introduces* the hazardous atmosphere into the space after employees have entered it. In these circumstances, certain of the safeguards applicable under the "alternate procedures" become worthless to assess whether ventilation makes entry safe. Thus, it is questionable whether the exception could apply to Trinity's lining operation. Assuming arguendo, however, that it may, Trinity offers the earlier atmospheric tests by Riddles and the later ones of Ron

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[17] This classification requires safeguards which a safety professional, such as Riddles, recommends to his clients. Although considering that the hopper compartments did *not* meet the legal requirements of a permit space, Riddles explained (Tr. 292):

> Q: But in your opinion, it was not a permit-required confined space?
>
> A: Dealing with my clients, when they're lining cars, I make them make it a permit-required confined space.
>
> Q: In how you treat it, you mean?
>
> A: Yes, ma'am. I get a lot of argument because it doesn't always meet the criteria. But I'm a safety professional and I want to make sure that the employees are safe. So the best way to do it is to make it permitted.

Bush, Trinity's divisional safety manager, to support (1) and (2) of the definition. Trinity did not follow methodical testing procedures. Riddles tested whatever Trinity happened to be spraying at the time of his visits to the Bessemer plant. Understandably, at the time Riddles tested, he was not attempting to meet stringent requirements necessary to establish the §.146(c)(5)(I) exception. Further, testing is only one part of the requirement. Even if Trinity sufficiently documented its tests, which it did not, it failed to maintain the records or to produce any at the time of the inspection or during the hearing. Nor was the data available to the liners who entered the space. Finally, McCann's LEL readings demonstrated that the ventilation system, in fact, was insufficient to maintain the space safe for entry, at least under the particular circumstances which he monitored. Trinity does not qualify for the "alternate procedures" exception of §1910.146(c)(5)(I). Paragraph (d), cited in items 3a through 5, applies.

Item 1: §1910.146(c)(1)--Evaluation of Space

The Secretary contends that Trinity did not properly evaluate the workplace to determine whether its spaces were permit-required in violation of §1910.146(c). The standard requires:

> The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces.

To establish a violation of a specific standard, the Secretary must prove by a preponderance of the evidence that (1) the standard applies to the working conditions, (2) the terms of the standard were not met, (3) employees had access to the condition, and (4) the employer either knew of the condition or could have known with the exercise of reasonable diligence. *E.g., Kulka Constr. Mgt. Corp.*, 15 BNA OSHC 1870 (No. 88-1167, 1992).

The term "evaluate" is not defined by the standard. The Secretary appears to argue that, whenever a permit space is subsequently determined to exist, an employer could not have properly evaluated the space and yet failed to so identify it. The standard requires that an evaluation be reasonable, not that it be made with perfect foresight. The heightened requirements necessary to meet the exception of §.146(c)(5)(I) are not applicable to this standard. A rational initial evaluation is all that is required. Follow-up evaluations are also necessary if changes in the workplace or work procedures affect the space. Certainly, Trinity failed to document its evaluation of the space. However, Riddles was shown to be a well-qualified safety professional with significant experience in testing for railcar conditions. His testimony that he conducted a significant number of atmospheric tests when Trinity initiated the railcar lining process is credited. McCann incorrectly believed that Trinity had not conducted more recent atmospheric tests at Bessemer after 1990. The deposition testimony of Ron Bush that he personally tested the railcar compartments at Bessemer is also credited (Exh. C-5; Tr. 273; Bush Depo. 6). Trinity designated other parts of its plant as permit spaces. Reasons for the discrepancy between Trinity's earlier LEL readings and McCann's LEL readings

were not conclusively explained. As noted, many factors may affect LEL levels. Trinity "evaluated" the workplace with sufficient specificity to meet the requirements of this standard. (See Appendix "B" of §1910.146.) The violation is vacated.

Item 2: §1910.146(c)(2)--Confined Space Danger Signs

The Secretary asserts that Trinity did not properly inform exposed employees that the hopper cars were permit-required space in violation of §1910.146(c)(2). The standard provides:

> (2) If the workplace contains permit spaces, the employer shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

Trinity evaluated the hopper cars to be nonpermit spaces. Trinity was incorrect in that evaluation. It did not post danger signs as the standard requires for permit spaces. Trinity argues that there was no "danger" to warn employees about. The existence of a standard presumes that a hazard is present when the terms of the standard are not met. *See Wright & Lopez,* 10 BNA OSHC 1108 (No. 76-256, 1981); *Clifford B. Hanay & Son, Inc.,* 6 BNA OSHC 1335 (No. 15983, 1978). Warning signs are required. Trinity was aware of the violative conditions, *i.e.,* that no signs were posted. The anticipated hazard is that employees will not know they should follow procedures to protect their safety while working in permit spaces. Failing to follow required permit space procedures while working in a hazardous atmosphere may result in engulfment by fire or explosion. Resulting injuries would be serious. Item 2 is affirmed as serious.

Items 3a - 3c: §1910.146(d)(3)--Develop Procedures; Item 3d: §.(d)(4)--Ventilation

In grouped items 3a-3c, the Secretary asserts that Trinity violated three separate subsections of §.146(d)(3). Paragraph (d) requires an employer to:

> (3) Develop and implement the means, procedures, and practices necessary for safe permit space entry operations . . .

Although Trinity had a "generic" written confined space program, Trinity did not consider hopper compartments to be permit space. Thus, it did not seek to develop or implement specific permit-space procedures mandated for the hopper compartments at the Bessemer plant. While continuing to dispute the permit-space classification, Trinity also asserts that it had sufficient procedures in place to comply with the standard's requirements.

Item 3a: The Secretary alleges that Trinity had no procedures "(i) [s]pecifying acceptable entry conditions," as required by §.146(d)(3)(i). This section ensures that the employer has identified hazards that could reasonably be expected to be found in the permit space at the time of entry (or a re-entry, which is not applicable here). The Secretary interprets this section as requiring an employer to establish controls for any arguably existing hazard. The interpretation is too broad. Before new hopper cars were ready to be lined, they were blown down with an air broom and blasted with steel

shot. This process did not cause a hazard in the space (Tr. 268). There was natural flow-through ventilation until the exhaust hose was subsequently attached to the top of the car; and until the lining was sprayed, no contaminates were introduced into the permit space. Riddles repeatedly tested this type of newly manufactured railcar. There was never an oxygen deficiency or volatile atmosphere or vapors before employees began spraying. The tests confirmed that, as would be expected, there were no hazards inside unlined cars when employees entered to set up scaffolding or to prepare to line the inside of the car (Tr. 225-227). Trinity's procedures governing these activities complied with the standard. An employer is not required to establish additional procedures to deal with non-existing hazards. Item 3a is vacated.

Item 3b: The Secretary alleges that, contrary to §.146(d)(3)(iii), Trinity did not plan for and develop procedures necessary for:

> (iii) Purging, inerting, flushing, or ventilating the permit space *as necessary* to eliminate or control atmospheric hazards; (emphasis added)

The Secretary admits he has no evidence to dispute Trinity's claim that, under usual conditions, the ventilation system maintained flammable vapors below 10 percent of the LEL (Secretary's brief p. 21). He argues, however, that the section applies because, if the ventilation system partially or completely failed, a hazardous atmosphere would exist inside the hopper cars during lining. As McCann's tests demonstrated, flammable vapors would exceed 10 percent of the LEL under some circumstances. Increased ventilation or purging was *necessary* at such times.

As stated, the adequacy of Trinity's ventilation procedures was lessened because oral procedures decreased assurance that the system would be operated optimally through changing filters each time the compartment was lined, periodically cleaning out the system, preventing opened lining material from contaminating the outside "make up" air, etc. Trinity knew of instances were employees failed to perform these tasks (Tr. 315, 323-324, 331). Trinity should have anticipated that there would be circumstances where it would have to control excessive flammable vapors. Having failed to develop procedures to purge or further ventilate the hopper cars whenever a hazardous atmosphere existed during spraying, Trinity violated the standard. Failure to have such procedures in place could result in an explosion or fire. Item 3b is affirmed as serious.

Item 3c: The Secretary charges that Trinity violated §.146(d)(3)(v) by failing to have written procedures in place for:

> (v) Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.

Unlike §.146(d)(3)(i) (item 3a) which applies to an initial entry or a re-entry, this section addresses procedures covering the *entire* period during which employees are within the space. Thus, Trinity's focus on the word "entry" in the subsection is misplaced. The standard requires procedures for

verifying that conditions remain acceptable "throughout the duration" of the time employees work in the space. Trinity violated this standard because it had no procedures for atmospheric monitoring while employees sprayed volatile lining materials in the railcars (Tr. 51). Failure to have procedures which address this hazard may result in a fire or explosion. Item 3c is affirmed as serious.

Item 3d: The Secretary alleges that Trinity violated §1910.146(d)(4)(ii) by either failing to provide necessary ventilating equipment for the hopper cars or, alternatively, by failing to assure that the equipment was properly used. Section .146(d)(4)(ii) requires an employer to:

> (4) Provide the following equipment . . . maintain that equipment properly, and ensure that employees use that equipment properly:
> (ii) Ventilating equipment needed to obtain acceptable entry conditions;

The Secretary maintains that Trinity did not provide ventilating equipment capable of avoiding atmospheric hazards, or alternatively that it did not use the equipment properly. Trinity had a ventilation system. Trinity's tests demonstrated that it kept the space free of a hazardous atmosphere in many circumstances. The Secretary relies on McCann's readings as proof that the system was inadequate or improperly maintained. Although the readings establish the existence of a hazardous atmosphere at the time of the inspection, they do not establish the *reason* it existed. Contamination of the make-up air or volatility of the particular lining mixture might have as likely caused elevated LEL readings. The Secretary only speculates that the ventilation system failed. The Secretary has not met his burden of proof. Item 3d is vacated.

Items 4a - 4b: §1910.146(d)(5)(i) - (ii)--Monitoring; Item 4c: §.(d)(10)--Evaluation of Space

Section (d)(5) (items 4a and 4b) requires employers to evaluate permit space conditions while conducting entry operations. Its subitems specify how this should be done.

Item 4a: The Secretary alleges that, in violation of §1910.146(d)(5)(i), Trinity failed properly to:

> (i) Test conditions in the permit space to determine if *acceptable entry conditions* exist before entry is authorized to begin, except that, . . . [exception not applicable]. (emphasis added)

The standard defines "acceptable entry conditions" as conditions where employees ". . . can safety enter into and work within the space" (§.146(b)).

Item 4b: The Secretary charges that, in violation of §1910.146(d)(5)(ii), Trinity did not:

> (ii) Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations;

As discussed, there was no pre-entry hazard for Trinity's new railcar lining operation. However, because the definition of "acceptable entry conditions" in item 4a extends coverage to include the period during which employees "worked," it is arguable that items 4a and 4b address the

same hazard and seek the same abatement. Both standards mandate atmospheric testing of the space during lining. The Commission has held citations to be duplicative where they involve substantially the same violative conduct. *Cleveland Consolidated, Inc.,* 13 BNA OSHC 114 (No. 84-696, 1987). In the specific circumstances of Trinity's activities, the asserted violations are duplicative. Since item 4b more specifically addresses the asserted hazard, item 4a is vacated as duplicative.

Section .146(d)(5)(ii) (item 4b) requires permit spaces to be tested or monitored, as necessary, to determine if acceptable entry conditions are being maintained during the course of entry operations. Either periodic or continuous monitoring may be required, depending on the particular circumstance of the permit space. The Secretary asserts the violation, in part, because after repeated requests, Trinity did not provide McCann with documents substantiating periodic testing.

Trinity argues that it did conduct weekly monitoring to evaluate the space during lining. When Riddles left Trinity in 1990, he understood that all plant safety managers would monitor hopper cars for LEL, oxygen and toxic air contaminants on a weekly basis. This was not a written requirement (Tr. 276-277, 320). Sep Etterer was Trinity's plant safety manager from 1990 through 1995. Although Etterer's superiors may have believed that Etterer monitored and kept computer records of such tests, this former employee, who was fired, never produced these records or back-up documents. Trinity never pursued the subject with him. Trinity merely speculates that Etterer deleted test results from his computer when he left. It remains completely unsubstantiated whether records existed or tests were ever made (Tr. 320-321, 325-326; Bush Depo. pp. 7-8). Failure to test for atmospheric hazards in a permit space during the course of entry operations violated the standard. The omission could lead to death or serious injury from an explosion or fire. Item 4b is affirmed as serious.

Item 4c: The Secretary asserts that, in violation of §1910.146(d)(10), Trinity failed to:

> Develop and implement a system for the preparation, issuance, use, and cancellation of entry permits as required by this section.

The standard contemplates use of permits as a means of controlling access to permit spaces, and requires that an employer have procedures to issue, use, and cancel entry permits. Trinity did not consider the space to be permit space and did not, therefore, use a entry permit system (Tr. 57). Failure to follow the precautions of the permit system may give employees false assurance that working in the space is hazard-free. Since hazards exist in the permit space which may cause an explosion or fire, employees should have been put on notice of that fact through the use of permits. The violation is affirmed as serious.

Item 5: §1910.146(d)(2)--Pre-Entry Identification of Hazards

The Secretary alleges Trinity did not properly identify and evaluate hazards of the permit space prior to employee entry. The standard requires:

Identify and evaluate the hazards of permit spaces before employees enter them.

The emphasis, here, is on the term *hazards*. Although Trinity sufficiently conducted a requisite initial survey, seeking to discover whether it had permit spaces (see discussion of §.146(c)(1)--item 1), its testing was too unstructured to be a proper hazard evaluation under this standard. The critical purpose of Riddles' test was to determine an optimum ventilation speed for drying the railcar's lining. Riddles explained that the airflow had to be controlled, and could be neither too fast nor too slow (Tr. 232). Speaking of his test for LEL at the Bessemer plant, Riddles explained (Tr. 269):

> [LEL test] results were documented within my files at the corporate office at Trinity in Dallas. We started out with a base line to know exactly what was going on in each plant. And when I would visit the plant and do an inspection, I would record on my notes what I found during the testing, whether it be velometer and direct reading or one or the other, I would go back and verify that with my base line.
>
> Once I checked my base line to see if there was any appreciable change, that would let me know whether they needed to go in and do some additional work to their exhaust system or not.

Riddles tested whatever formula or configuration of compartments that employees happened to be working on during his visits. No records were maintained of these tests after they were compared to the baseline figures. The Secretary correctly argues that this was an insufficient evaluation of potential hazards for the permit space during lining. Many different lining formulas were designed for a myriad of anticipated uses. While taking personal samples in the 1980's, Riddles documented exposures to toxic substances above the PEL for some of the more exotic formulas. The hazards in the permit space changed because the chemical composition of the lining material often changed (Tr. 270). Trinity should have conducted a systematic evaluation for each of the potentially hazardous chemical formulations used as lining materials. The material safety data sheets (MSDS) for the formula the liners sprayed during the investigation reflect, as Riddles acknowledged, that harm might result from exposure to products used in lining (Tr. 272).[18] Harm may also arise from the volatile fumes occasioned by the spraying. Failure adequately to evaluate for these hazards may cause excessive chemical exposure or excessive flammable vapors, resulting in serious health and safety hazards. The violation is affirmed as serious.

Penalty for Confined Space Violations

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[18] Trinity provided protective equipment (including airline respirators) for its liners. This would have protected employees from chemical exposures above the PEL. While a factor in determining an appropriate penalty, use of respirators does not obviate the standard's requirement for a hazard evaluation. Moreover, as Trinity considered use of the protective equipment voluntary on its part, there was no assurance that employees would continue to use this personal protective equipment in the future (Tr. 303, 312-313).

The Commission must find and give "due consideration" to the size of the employer's business, the gravity of the violation, the employer's good faith, and history of past violations in determining an appropriate penalty. *J.A. Jones Constr. Co.,* 15 BNA OSHC 2201, 2213-14 (No. 87-2059, 1993). These factors are not accorded equal weight. The gravity of the violation is the primary element in the penalty assessment. *Trinity Indus.,* 15 BNA OSHC 1481, 1483 (No. 88-691, 1992).

Trinity is a large international corporation, with over 20,000 employees, 500 of which are at its Bessemer location alone (Tr. 9, 328). It is the second or third largest producer of railcars in the United States (Tr. 220). Considered as a positive factor in an evaluation of Trinity's good faith is the fact that it had a corporate-wide safety program, even though the actual enforcement of the program was questioned. Trinity sought to secure early abatement of many of the asserted violations. Its maintenance employee accompanied the walkaround party for part of the time in order to make immediate corrections. Employees in the lining department were provided with and wore personal protective equipment (Tr. 184). Trinity's past history shows serious violations within the previous three years (Tr. 178).

The Secretary has established distinct, but somewhat overlapping, violations of the permit space requirements. Two employees had a significant exposure to the hazard of a fire or an explosion in a confined space. Although employees sprayed lining material for only 10 to 12 minutes at a time, employees worked in one compartment after the other throughout the workday. Failure to have danger signs (item 2); failure to develop procedures related to permit space safety (items 3b and 3c); and failure to use permits (item 4c) are lower gravity violations. Failure to monitor (item 4b) and to perform a systematic evaluation of permit space hazards (item 5) are more immediately related to safety and health. Also considered is the fact that only two of the four violations alleged for item 3 and two of the three alleged for item 4 were affirmed. The following penalties are assessed: item 2, $1,000; items 3b and 3c, $1,000; items 4b and 4c, $1,250; and item 5, $1,500.

Item 8: §1910.254(d)(9)(iii)--Damaged Welding Cables

The Secretary asserts that Trinity used welding cables with damaged insulation and exposed conductors in violation of §1910.254(d)(9)(iii). The standard provides:

> Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the service conditions.

During the walkaround McCann observed and videotaped damaged welding cables (or leads) in work areas throughout the plant. He pointed out some of these severely damaged cables to Trinity's management. Many of the cables were coiled up at various points along the floor. The

Secretary did not cite for these cables. Management personnel told McCann that they had difficulty keeping good cables in service because of the rough wear inherent in the job. A management representative also told McCann that damaged cables were to be put into a bin when the cables were to be taken out of service, although most were not in bins. (Exh. C-8; Tr. 103-104, 195-196). In addition, McCann also observed two damaged welding cables "hooked up" as if ready to be used. The Secretary based his citation on these two cables. Each had torn outer insulation and bare conductors showing (Tr. 61-62).

Exposure

Trinity argues that the Secretary did not prove that any of the welding leads were actually being used. It asserts that neither the coiled, nor the hooked up cables were necessarily used in a damaged condition. Trinity misunderstands the Secretary's burden. The Secretary need not document that every observation of violative conditions is specifically tied to a particular exposure. It is sufficient to prove that employees had access to the violative conditions. *See Donovan v. Adams Steel Erection, Inc.,* 766 F.2d 804 (3rd. Cir. 1985). By necessity, evidence of access is often circumstantial. As the video tape illustrates, many of Trinity's cables showed multiple, superficial repairs, usually made by wrapping the damaged area with electrical tape. These repairs appeared to have been made during a somewhat lengthy period of time. Even the tape from some of the repairs was torn and abraded, giving rise to an inference that abraided cables were often taped and re-used. In these circumstances, the fact that damaged cables were attached to a welding machine supports that the cited cables were available for use. Any suggestion that the welding cables were not used in the conditions observed is unpersuasive.

Knowledge

For this and for other non-permit-space-related allegations, Trinity argues that it was without knowledge of the violative conditions. The Secretary may establish knowledge by showing that an employer knew, or with the exercise of reasonable diligence could have known, of the existence of a violative condition. *Bland Constr. Co.,* 15 BNA OSHC 1031, 1032 (No. 87-992, 1991). An employer who lacks actual knowledge can be charged with constructive knowledge of the condition it could have detected had it made a reasonably diligent inspection of its work area for hazards. Trinity acknowledges that by the nature of its work, and given the size of its large facility, some hazards often reoccur. Proof that an employer was not reasonably diligent requires more than a showing that the employer "has not detected or become aware of every instance of a hazard." *Texas A.C.A., Inc.,* 17 OSHC BNA 1048, 1051 (No. 91-3467, 1995). Here, and for similar violations, however, the Secretary has shown more.

Trinity's inspections were not sufficiently specific, extensive or frequent. The numerous damaged, and superficially repaired, cables would have been difficult to miss. They should have

alerted Trinity to the existence of widely-occurring maintenance problems. Since the cited cables were in plain sight, if Trinity had made even a cursory inspection for the hazard, it would have discovered it. When conditions were plainly visible to supervisory personnel, knowledge is generally established. *A.L. Baumgartner Constr., Inc.* 16 BNA OSHC 1995, 1998-99, 2000 (No. 92-1022, 1994). Nothing in the record supports a conclusion that the hazardous conditions either occurred recently or that Trinity inspected with appropriate frequency.

The Secretary has established the elements of the violation, and the burden shifts to Trinity to prove its defense.

Employee Misconduct

Trinity contends that if a violation occurred, it was the result of employee misconduct. To establish an employee misconduct defense, the employer must show that: (l) it had work rules designed to prevent the violation; (2) the work rules were adequately communicated to its employees; and (3) it took steps to discover violations of those rules, and had effectively enforced the rules when violations were discovered. *E.g., Falcon Steel Co.,* 16 BNA OSHC 1179, 1193 (No. 89-3444, 1993). As discussed in more detail at item 13, *infra,* the focus of an employee misconduct defense ought to be on *the employees' conduct,* not on the a condition of equipment. It is questionable whether the defense ever applies in these circumstances. *Assuming arguendo* that it does, Trinity has not met the elements of the defense. Trinity contends that it had an *oral* work rule to the effect that employees should lay damaged cables aside so that maintenance personnel could collect them "monthly most of the time" (Tr. 198). Terry Boyd, maintenance supervisor, described the "work rule" as follows (Tr. 189-90):

> Q: What are they told to do if the cable is damaged?
>
> A: If the cables are damaged, they're to remove it and install a new one.
>
> Q: When they remove it, do they just put it out somewhere and you guys collect them?
>
> A: Some of them will coil the damaged cable up. Some of them just throw it down. We come along and collect these periodically and scrap them. But some people are religious about doing things neat and some aren't. So some of these cables we saw during that inspection were coiled up nice and neat. Some of them were hanging up and we hadn't got to them yet. But we do discard them.

A workrule should be more than a maintenance schedule. In addition to the asserted oral workrule, Trinity introduced its generally-termed "Employee Safety Digest" (Exh. R-5, p. 19); a safety checklist, asking whether leads were "in good repair" (Exh. R-7); and the minutes of a safety meeting, suggesting that leads with wire showing should be taped so "they will not short out" (Exh. R-8).

In order to be considered effective, an employer's work rule must be clear enough to eliminate employee exposure to the hazard covered by the standard, *Foster-Wheeler Constructors, Inc.,* 16 BNA OSHC 1344, 1349 (No. 89-287, 1993), or be "designed to prevent the cited violation." *Gary Concrete Prods. Inc.*, 15 BNA OSHC 1051, 1056 (No. 86-1087, 1991). As instructed, Trinity's employees often taped, rather than replaced, damaged cables. What was to be considered "in good repair" was open to question. The alleged workrules were not sufficiently specific; would not prevent the violation; and were not shown to be enforced. The defense having failed, the violation is affirmed.

The anticipated hazard is that cables with damaged insulation more readily expose the cable's internal conductors and more easily subject employees to electrical shock. In the heavy industrial setting, the result of the shock would most probably be serious bodily injury. The violation is affirmed serious.

One or more employees may be exposed to the hazard of an electrical shock while welding or when coming into contact with damaged portions of energized cables. A penalty of $1,700 is assessed.

Item 9: §1910.303(b)(1)--Hazardous Electrical Wiring

The Secretary alleges that electrical equipment (a 1,500-ton press) was not free from recognized electrical hazards in violation of §1910.303(b)(1). The standard requires:

> Electrical equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined using the following considerations:
>
> > . . . (vii) Other factors which contribute to the practical safeguarding of employees using or likely to come in contact with the equipment.

The alleged "recognized hazard" is that an employee could be shocked because a damaged electrical cord sat at the base of a "palm control" for one of Trinity's 1,500-ton presses. The cord had a wide tear (about 6 to 8 inches) in the outside sheathing of the cord, exposing a bundle of wires. The thin insulation of the individual bundles of wires remained intact (Exh. C-8; Tr. 186-187). The damaged portion of the cord lay 1 to 1 ½ inches away from the metal base of the palm control, which was periodically and predictably (although not frequently) used (Tr. 185). The palm control was energized (Exh. C-8 at 16; Tr. 63-64, 90-91).

Even if conditions are shown to be hazardous, the Secretary must establish that the cited standard applies to the facts. Section 1910.303(b)(1) broadly addresses hazards inherent in the electrical equipment. McCann suggests that the damaged portion of an electrical cord could energize the base of the equipment, apparently arguing that the cord could then be considered a "facto[r] which contribute[d] to the practical safeguarding of employees." The fact that the language of the standard is broad is not an invitation to fit every circumstance relating to electrical equipment within

its terms. The anticipated hazard addressed by this standard is the danger which comes from the equipment itself. Use of a damaged cord to energize properly functioning electrical equipment may be covered by other standards. Here, the Secretary did not meet his burden of proof to establish that the alleged hazard was "recognized" or that the standard applied. The violation is vacated.

Item 10: §1910.303(f)--Labeling Switch Boxes

The Secretary charges that the means for disconnecting Trinity's press was not properly identified in violation of §1910.303(f). In pertinent part, the standard provides:

> Identification of disconnecting means and circuits. Each disconnecting means required by this subpart for motors and appliances shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. *Each service, feeder, and branch circuit,* at its disconnecting means or over current device, shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. (emphasis added)

After McCann pointed out the tear in the palm control cord to maintenance supervisor Boyd (item 9), Boyd began to wrap the cord with electrical tape. McCann suggested that Boyd disconnect the press before continuing to tape it. Boyd climbed the platform to gain access to a series of larger main shut-off switch boxes and medium-sized switch boxes on the west wall of the building. Each box was marked with the identical number: "60802." This is the number designated for the 1,500-ton press. Trinity contends that the boxes were properly labeled because each, in fact, controlled some aspect of the press or the palm control attached to it. It further asserts that the main breakers could have de-energized the entire press. The Secretary counters that there are more than two major switches, so that it was not clear that even pulling the two would completely disconnect the machine. Vic Purfall, identified by McCann as either the press operator or supervisor in charge of the area, did not know which of the various switch boxes corresponded to the palm control (Exh. C-8 at 204; Tr. 67, 97).

Likewise, McCann observed that even maintenance supervisor Boyd appeared confused while attempting to lock out the particular switch box (Tr. 99). It is not important why Boyd did not immediately shut off the proper circuit. The standard requires that "each service, feeder, and branch service" be sufficiently identified. The palm control is a discrete portion of the equipment even though it functions with the press. The *purpose* of the switch box which controlled it should have been identified. Using the same number to identify all of the many switches which lined the wall insufficiently identified the circuit. The Secretary has established the violation.

The anticipated hazard is that employees will not be able to tell which switch box controlled the equipment (Tr. 66-68). Trinity's policy is that only maintenance personnel are permitted to do repair work, and it is not necessary for others to handle circuit boxes. The Secretary correctly points out, however, that other employees may have to disconnect equipment, either in an emergency or to

perform some type of work on the machine other than maintenance. If an employee delayed disconnecting electrical equipment or erroneously believed that a part of the equipment had been de-energized, the employee could receive a severe shock or other injury. The violation is affirmed as serious. One or more employees were exposed to the hazard. The gravity of the violation is moderate. A penalty of $1,000 is assessed.

Item 11: §1910.305(a)(4)(v)--Open Conductors

The Secretary asserts that conductors were exposed to physical damage in violation of §1910.305(a)(4)(v). The standard provides:

> Protection from physical damage. Conductors within 7 feet from the floor are considered exposed to physical damage. Where open conductors cross ceiling joints and wall studs and are exposed to physical damage, they shall be protected.

A conductor (a flexible cord) was properly contained within a metal conduit which ran from a switch box along the wall, and followed the wall horizontally. The conduit turned downward and then terminated. The conductor (cord), which had been protected inside the conduit until that point, continued along the wall but without the protection of the conduit. The cord was spliced and then was draped between a column. It ran across the sheet metal wall, looped over metal hooks, and was finally connected to another switch box (Exh. C-8 at 508-520). McCann estimated that the cord ran for approximately 30 feet without conduit. At places, the electrical cord was 4 to 5 feet from the floor, well within the 7-foot criteria established by the standard (Tr. 69-70).

As the standard contemplates, conductors must be protected if subject to damage. Since the cord was hung at less than 7 feet from the floor, the standard presumes that it was subject to damage. The substantial portion of the cord without a metal conduit was clearly visible. At a minimum, Trinity's failure to protect the conductor should have come to its attention at the time it spliced the cord.

Trinity asserts that the Secretary failed to prove exposure, especially because he did not establish how close employee traffic came to the hazard. Such specific exposure need not be shown. The area was a highly traveled accessway. Employees carrying materials or operating equipment could easily contact the wire (Tr. 70). The potential hazard was increased since the splice in the cord could be loosened by dirt or from being pulled. Employees coming into contact with the conductor's exposed wires could receive an electrical shock. Although McCann considered electrocution to be possible, the most probable result would be a milder electrical shock which, given the heavy equipment and materials used in the area, could be expected to result in serious bodily harm. The violation is affirmed as serious.

The gravity of the violation is moderate. Since the unprotected conductor extended 30 feet, there was an expanded area of exposure. It was also possible for the metal wall or columns to become energized because both were in contact with the wire. A penalty of $1,275 is assessed.

Item 13: §1910.305(b)(2)--Switch Box Coverings

The Secretary alleges that switch boxes were without covers in violation of §1910.305(b)(2). In pertinent part the standard requires:

> Covers and canopies. All pull boxes, junction boxes, and fittings shall be provided with covers approved for the purpose. If metal covers are used they shall be grounded. In completed installations each outlet box shall have a cover, faceplate, or fixture canopy. . .

The standard specifies that each fitting or junction box requires a cover or faceplate. The Secretary alleges that two switch boxes on BC60 Universal Blowers "mancoolers" (large blower fans) were without proper covers.

In the first instance, a fan in the rollover area had a cardboard cover on its switchbox (Tr. 72). Cardboard, which may become wet, easily deteriorates. Cardboard can be penetrated by tools or by fingers and is not an approved cover. McCann observed that this first fan was in operation. Boyd disagreed because he believed that a fan would not have been needed for cooling in late October (Tr. 194). McCann's specific recollection is credited over Boyd's assumption, especially since it can be warm in Alabama in October.

In the second instance, the switch box for a fan in fab bay #1 was without any cover (Tr. 73). That mancooler was not in operation. As shown by the videotape exhibit, the cable powering the mancooler was not coiled up until after McCann pointed out the violation (Exh. C-8 at 334-369). The assertion that the fan was in the process of being scraped out prior to the inspection is, accordingly, rejected (Tr. 194). Since the mancooler was available for use, Trinity's employees had access to the hazard. Exposure is established in both instances.

Trinity asserts that it was without knowledge of the alleged violation. In McCann's experience switch covers may be removed in order to service equipment. Sometimes they are simply not replaced. Many of the same considerations which established knowledge for item 8 apply here. Trinity had constructive knowledge of conditions which were plainly visible in the work area.

Employee Misconduct

Trinity asserts that it does all that it can to inspect for and to eliminate open electrical boxes (Tr. 311-312). The employee handbook requires that "covers and doors on junction boxes, switch boxes, disconnect panels, shall be kept closed and/or in place" (Tr. 192-93). Trinity's department supervisor is required to fill out a monthly checklist, which includes the question "are electrical cover panels secured on items like switch boxes, junction boxes, etc.?" One month before OSHA's

inspection, the supervisor checked the "yes" box for that question (R-9, p.4). Trinity also described a general disciplinary procedure (Tr. 266-267, 312). Trinity argues, then, that it has established each element of its defense.

The first problem with asserting the employee misconduct defense in these circumstances is back-door nature of the argument. Trinity *assumes* that an employee(s) (presumably a non-supervisory one, since different considerations apply for supervisors) must have caused the hazard or failed to correct for it. The employee misconduct defense goes to behavior of employees, rather than to the condition of the equipment. The second problem with the defense is the very general nature of Trinity's evidence to support it.

According to Chambers, keeping the plant's more than 2,000 switch boxes properly covered was an ongoing problem. The evidence does not disclose which employees were allegedly trained not to remove the covers, which were required to inspect for the condition, or which were required to replace covers. Trinity did not show that a supervisor's once-a-month inspection was adequate to identify or correct the problem. Nor was it demonstrated whether or how the written disciplinary program may have actually been applied in circumstances where someone failed to replace the switch covers. The defense is rejected.

Although the area of exposure is small, the open switch box was very close to the fan's "on and off" switch. Employees could place fingers or tools into the energized box and could receive an electrical shock, which could most likely result in serious injury. The gravity of the violation is moderate. A penalty of $1,275 is assessed.

Item 14: §1910.305(g)(2)(iii)--Strain Relief

The Secretary contends that tension was transmitted to joints or terminal screws of cords in violation of §1910.395(g)(2)(iii). The standard provides:

> Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

The Secretary alleges two separate instances of the violation. In Instance a, the Secretary alleges that two of three cables tied into a junction box in the rollover area were not properly connected with threading or clamps. The switch box was 8 to 10 feet above the ground. The videotape documents that the two outermost cables (the middle cable was properly supported) had pulled loose from their outer insulation. The two cables did not have strain relief at the point they connected into the switch box. One of the two cables energized an outlet suspended from the cable, which employees were using to connect power equipment. The other ran down the wall and across the floor, where it could be subject to pulls from foot traffic or equipment (Exh. C-8 at 613-642; Tr. 75-77) The standard requires strain relief. There was none for the two cords.

Trinity denies employee exposure to a shock hazard, asserting that if one of the three wires were pulled from the junction box, the 110-volt circuit would immediately become de-energized (Tr. 194-195). Also, it suggests that a 15 amp fuse would blow before anyone could become seriously shocked (Tr. 199). As stated, a hazard is presumed to exist if the standard's terms are not met. Moreover, strain relief keeps the connection solid between the three inside wires of each cord and the terminal screws. Trinity's argument incorrectly assumes that all three inside wires of the cord would always be pulled free at the same time. Employees had access to the violative conditions and the violation was in plain sight. The violation is affirmed for Instance a.

In Instance b, the Secretary asserts that a conduit to an oil unit in the interior lining area was torn and improperly connected to the base, placing tension on terminal screws (Tr. 77, 113-114). Neither the videotape (Exh. C-8 at 728) nor McCann's testimony sufficiently established the violation. The violation is affirmed for Instance a, only; Instance b is vacated.

If an employee received an electrical shock while carrying equipment, the result would be physical injury, but would most likely not be electrocution. The existence of a 15-amp fuse further lessens the gravity of the violation. It does not change the serious classification. A penalty of $850 is assessed.

Item 15: §1910.307(b)--Unapproved Equipment

The Secretary alleges that Trinity used non-explosion proof junction boxes and seals in violation of §1910.307(b). The standard requires:

> Electrical installations. Equipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, approved for the hazardous (classified) location, or safe or for the hazardous (classified) location.

Without dispute, the electrical switch and junction boxes at the cited location in the lining area were not explosion proof. Conduits leading to these switch and junction boxes did not have seals to prevent arcing or sparking (Exh. C-8 at 1141, 1150; Tr. 79-81, 126-130).

The issue is whether the interior lining area was a "classified" hazardous location. The Secretary contends that the area was a Class I, Division 2, location, according to McCann "based on the flammability or combustibility of the chemicals or material that's being used in that area" (Tr. 78).

A Class I, Division 2, location is defined in pertinent part by §1910.399(b) as a location:

> (b) in which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation and which might become hazardous through failure or abnormal operations of the ventilating equipment;

The parties dispute the meaning of the term, "might become hazardous," but the rest of the definition applies. McCann admitted that theoretically no explosion should occur if vapors measured less than 10 percent of the LEL (Tr. 143- 144). As Trinity argues, other factors also bear upon

whether and to what extent a location meets the Class I, Division 2, criteria. The Note which follows the standard sets outs four considerations to be weighed under the Subpart (b) definition:

> This classification usually includes locations where volatile flammable . . . vapors are used, but which would become hazardous only in case of an accident or of some unusual operating condition. [1]The quantity of flammable material that might escape in case of accident, [2] the adequacy of ventilating equipment, [3] the total area involved, and [4] the record of the industry or business with respect to explosion or fires are all factors that merit consideration in determining the classification and extent of each location.

By emphasizing these practical criteria, the standard seeks a realistic appraisal of the potential for occurrence of the hazard. The Secretary must demonstrate that the conditions existing in the lining department were such that the proximity of the non-explosion proof switch and seals to the source of flammable vapors presented a hazard of a fire or explosion. *Pool Arctic Alaska,* 14 BNA OSHC 1304 (Nos. 88-1030, 1103, 1989) (ALJ). "The mere presence of flammable vapors is not an explosion hazard." *Royston Laboratories Inc.,* 14 BNA OSHC 1177 (No. 88-1246, 1989) (ALJ).

Unusual operating procedures (for example, failing to change filters or needing to clean out the system) diminishes the effectiveness of the ventilation system. Riddles' atmospheric tests of the lining area covered a period of years and never reached as high as 10 percent of the LEL at the source (Tr. 230). Given Trinity's previous and subsequent LEL readings, it is presumed that McCann's test results were elevated because of unusual circumstances. Regarding the criteria in the Note, the quantity of flammable material was limited to the amount sufficient for two liners to spray for approximately 10 minutes. The interior lining department where the spraying took place appeared to be a large and relatively open room (Exh. C-8). Trinity has not had a fire or explosion in the interior lining department (Tr. 332).

The Secretary relies on McCann's LEL reading of 15 percent taken at a point 5 feet from where spraying operations were being conducted with the use of continuous, mechanical ventilation (Tr. 30, 155-56). The junction boxes were 3 feet further away, 8 feet from the hopper car openings, and another 8 feet up the wall than the area where McCann took these readings. At the point beneath the location of the cited switch boxes and wiring, McCann's LEL readings were 4 to 6 percent. Since the sprayed lining material or vapors from the open buckets could be heavier than air (Exh. C-1), it must be assumed the readings would be further reduced at the height of the switches. There was no proof that flammable vapors could be expected to reach anywhere near as high as 10 percent of the LEL at that level of the switches.

Weighing the factors which are to be considered under the definition of "classified," it is determined that the evidence submitted is insufficient to establish the definition. Item 15 is vacated.

Item 16: §1910.1200(f)(5)(ii)--Hazard Labels

The charge is that Trinity did not properly label containers of hazardous chemicals with hazard warnings in violation of §1910.1200(f)(5)(ii). The standard requires:

> Appropriate hazard warnings, . . . which provide at least general information regarding the hazards of the chemicals, . . . will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

The Secretary correctly asserts that bulk storage tanks of MEK, toluene and xylene were not labeled with physical and health warnings. A tank of diesel fuel was not labeled; and a tank of gasoline was mislabeled as diesel fuel (Exh. C-8 1231-1329; Tr. 84-88, 130-133). Trinity's employees worked in the area dispensing chemicals from the tank (Tr. 88).

Labeling hazardous chemicals with their physical affects permits employees to relate symptoms of exposure to a particular chemical. Employees are alerted to the necessity of taking appropriate precautions while using the hazardous chemical (Tr. 87). The requirements of the standard were not met. Trinity did not introduced evidence or offered argument on the issue. Trinity violated the standard. A penalty of $1,275 is affirmed.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

The foregoing decision constitutes the findings of fact and conclusions of law in accordance with Rule 52(a), Fed.R.Civ.P.

ORDER

Based on the foregoing decision, it is ORDERED:

Item	Standard	Disposition	Penalty
1	§1910.146(c)(1)	Vacated	-0-
2	§1910.146(c)(2)	Affirmed	$1,000
3a	§1910.146(d)(3)(i)	Vacated	-0-
3b & 3c	§1910.146.(d)(3)(iii) §1910.146(d)(3)(v)	Affirmed	$1,000
3d	§1910.146(d)(4)(ii)	Vacated	-0-
4a	§1910.146(d)(5)(I)	Vacated	-0-
4b & 4c	§1910.146(d)(5)(ii) §1910.146(d)(10)	Affirmed	$1,250
5	§1910.146(d)(2)	Affirmed	$1,500
8	§1910.254(d)(9)(iii)	Affirmed	$1,700
9	§1910.303(b)(1)	Vacated	-0-

10	§1910.303(f)	Affirmed	$1,000
11	§1910.305(a)(4)(v)	Affirmed	$1,275
13	§1910.305(b)(2)	Affirmed	$1,275
14	§1910.305(g)(2)(iii)	Affirmed	$850
15	§1910.307(b)	Vacated	-0-
16	§ 1910.1200(f)(5)(ii)	Affirmed	$1,275

NANCY J. SPIES
Judge