

SECRETARY OF LABOR,
Complainant,
v.
TRINITY INDUSTRIES, INC.,
Respondent.

OSHRC Docket No. 95-1597

DECISION

Before: RAILTON, Chairman; ROGERS and STEPHENS, Commissioners.

BY THE COMMISSION:

Trinity Industries, Inc. (“Trinity”) builds dry hopper barges at its shipyard in Caruthersville, Missouri. On March 8, 1995, while two employees were welding inside a newly constructed barge, a fire started, killing both individuals. After an inspection by the Occupational Safety and Health Administration (“OSHA”), Trinity received two, multi-item citations alleging violations of the shipyard employment standards at 29 C.F.R. Part 1915. Administrative Law Judge Ken S. Welsch held a hearing in Memphis, Tennessee, between September 6 and October 4, 1996. In an April 13, 1998, Decision and Order, the judge affirmed most of the citation items.

None of the items in Citation 1 are at issue on review. Citation 2 consists of twenty-two items, twelve of which are at issue on review. The judge affirmed eleven of these items and vacated one item. The eleven items affirmed by the judge allege willful violations of the enclosed space testing and training standard at section 1915.12 (seven items); the maintenance of safe conditions standard at section 1915.15 (two items); the fire prevention standard at section 1915.52 (one item); and the welding in way of preservative coatings standard at section 1915.53 (one item). The judge vacated one item alleging a violation of the hot work testing standard at section 1915.14, finding that Trinity met an exception contained in that standard.

For the reasons stated below, we affirm two testing items (including the item vacated by the judge), one training item, and the fire prevention item. We vacate the remaining items.

Background

The Caruthersville shipyard is part of Trinity's marine division. Trinity purchased the shipyard in 1993 and began building dry hopper barges there in mid-1994. Trinity builds only new barges at Caruthersville and does no repair work. A dry hopper barge is an open-top hopper for carrying cargo. The hopper is surrounded by a series of tanks. The tanks along the sides of the hopper are referred to as "wing tanks," and the tanks on the ends are referred to as the "aft transom" and the "forward transom." The wing tanks and transoms protect the hopper from being punctured and provide ballast to keep the barge from tipping over. Trinity's barges are constructed from structural steel. The sections of the barge are constructed separately and then welded together in the main erection building. After the barge is constructed, it is moved into the paint building where the barge is painted and the insides of the transoms and tanks are sprayed with a rust inhibitor. At the time of the accident, Trinity used the rust inhibitor Tectyl 400C-WD, manufactured by Valvoline.¹ A thin coat of Tectyl, approximately one thousandth of an inch thick, is sprayed inside the transoms and tanks.

Tectyl is a corrosion preventive compound consisting of a rust inhibitor and a carrier, Stoddard solvent. The Stoddard solvent carries the rust inhibitor to the surface and evaporates, leaving behind the inhibitor, a process referred to as "curing." The product information sheet for Tectyl recommends a 24-hour curing time.² Tectyl's flash point is 106 degrees Fahrenheit. According to the information sheet, Tectyl presents a potential fire and explosive hazard, particularly while it is curing. The information sheet warns in bold print, "PARTIALLY CURED FILM SHOULD NOT BE EXPOSED TO IGNITION SOURCES SUCH AS FLARES, FLAMES, SPARKS, EXCESSIVE HEAT, OR TORCHES." Also, the information sheet warns of various health effects that may result from acute overexposure to Tectyl, including eye and skin irritation and breathing difficulties. Each of the items on review

¹ Tectyl 400C-WD is one of approximately 400 Tectyl products. When we refer to Tectyl in this decision, we are referring to Tectyl 400C-WD.

² Regis Rumpf, technical director for Valvoline Industrial Coatings, testified that Tectyl's 24-hour curing time is based on 50 percent relative humidity and a temperature of 77 degrees Fahrenheit. He stated that the colder the temperature, the longer Tectyl takes to cure. Humidity, air circulation, and the thickness of the application may also affect Tectyl's curing time. Rumpf testified that Tectyl would never cure in as little as ten hours "unless you had a really high temperature," and said that if Tectyl cures too fast it becomes brittle and does not adhere to surfaces.

alleges a violation based on the exposure of Trinity's employees to Tectyl or Stoddard solvent vapors.

In early 1995, Trinity began building a series of dry hopper barges. On March 8, 1995, the first barge, Barge B-133, had been constructed and painters in the paint building were in the process of spraying Tectyl inside its transoms and tanks when engineers notified Trinity's production manager of a design problem involving the structural supports inside the transoms. To correct the problem, Trinity decided to assign a crew to weld twelve gusset plates – triangular steel reinforcement plates – inside each transom.³

Painters began spraying Tectyl inside the transoms and tanks of Barge B-133 at 3:00 p.m. on March 8, 1995, and the spraying was completed between 5:00 and 5:30 p.m. Trinity's designated competent person, Michael Slavings, checked the atmosphere inside the transoms and tanks some time between 4:20 p.m. and 5:00 p.m. and obtained readings for Stoddard solvent vapors of 500 parts per million ("ppm") in the forward transom and 400 ppm in the aft transom. After obtaining these readings, Slavings directed that a blower (a fan) be used to ventilate the aft transom. Slavings retested the aft transom approximately 30 to 45 minutes later and obtained a vapor reading of zero. Slavings then told a supervisor that the forward transom would also have to be ventilated, posted a Hot Work Permit near a ladder used to descend into Barge B-133, and left the shipyard.

The welding crew for Barge B-133, consisting of eight welders, started setting up around 6:30 p.m. At 7:00 p.m., the welding crew entered the forward transom and began welding gusset plates. From 7:30 to 8:00 p.m., the welding crew took a dinner break. After the break, most crew-members returned to the forward transom. Two welders, John Travis and Wayne Ivory, began welding gusset plates inside the aft transom. Shortly before a 10 p.m. break, the crew inside the forward transom completed its welding. A crew member went to the aft transom and told Travis and Ivory that it was break time, but the two men did not go with the crew on break. By the time the rest of the crew returned from break, Travis and Ivory were engulfed in flames. Travis died on the deck just outside the opening to the aft transom, and Ivory died on the deck near the forward

³ Each transom measured 12 feet high, 35 feet long, and 5 feet wide. Employees entered the transoms through a 24 x 16 inch opening on the deck of the barge. The judge found that the transoms were "enclosed," but not "confined," spaces, citing the definitions of those terms at 29 C.F.R. § 1915.4(p) and (q). We note that on review the Secretary does not object to the judge's finding.

transom. The accident occurred at approximately 10:15 p.m. At the time of the accident, Travis and Ivory had welded in nine of twelve gusset plates and had partially welded one other plate in the aft transom.

The cause of the fatal fire is not clear from the record. The Secretary suggests that the fire started when Tectyl on which Travis was welding ignited, or when Stoddard solvent vapors ignited. Trinity, on the other hand, argues that the fire started when welding slag ignited Travis' clothing. After the accident, Trinity retained Armstrong Forensic Laboratory, a laboratory that specializes in the recovery and identification of flammable liquids from fires, to evaluate the fire in Barge B-133. Andrew Armstrong, a chemist, testified that based on the conditions existing in Barge B-133 on the night of March 8, 1995, there was "zero" chance that the fatal fire was caused by the ignition of flammable vapors and a "reasonably low" probability that the fire started with the ignition of Tectyl itself.

Trinity reported the accident to OSHA at noon on March 9, 1995. Industrial Hygienist ("IH") Mae Ping Grogg initiated the OSHA inspection on March 10, 1995.

Threshold Issues

Trinity argues that a number of the citation items should be vacated because the standards under which it was cited apply only to repair work and shipbreaking, not to new construction. Trinity also argues that several items should be vacated because a more specific standard applies to its activities, thereby preempting the cited standards. The judge rejected both of these arguments. We agree with the judge.

Applicability of Certain Parts of 29 C.F.R. §§ 1915.12, 1915.14 and 1915.15

Trinity was cited for four violations of standards which require the inspection or testing of spaces that "contain or have contained" combustible or toxic liquids or gases.⁴ Trinity argues that these items should be vacated because the "contain or have contained" language in the cited standards refers to bulk cargo, not to a rust prohibitive coating sprayed on the walls of the space in question. In support of its argument, Trinity notes that previous versions of the cited standards stated that they applied to spaces "containing or having last contained combustible or flammable liquids or gases *in bulk.*" (Emphasis

⁴ The items involved are 2a, 2c, 2d and 2e – alleging violations of 29 C.F.R. §§ 1915.12(b)(1)(i), 1915.12(c)(1)(i), 1915.12(c)(1)(ii) and 1915.14(a)(1)(i), respectively.

added.) This language remained the same when OSHA proposed changes to the shipyard standards in 1988. However, when the shipyard standards were finally amended in 1994, the phrase “in bulk” was deleted from certain standards, including the cited standards in sections 1915.12 and 1915.14. The preamble to the final rule does not explain why this phrase was deleted. However, the proposed rules state that, at least for the standards under which Trinity was cited, “there is no change from the existing requirements.” 53 Fed. Reg. 48,097-100 (1988).

According to Trinity, this specific language supports a finding that the standards continue to apply only to spaces that contain or have contained materials in bulk. Trinity notes that certain parts of the new standards – section 1915.12(a)(1)(i), for example – refer to spaces that have been “coated and closed up” or “freshly painted.” Trinity argues that because “coated” spaces are listed separately from spaces which “contain or have contained” combustible liquids, spaces that are coated with Tectyl should not be considered spaces which actually “contain” this substance. Trinity also argues that the plain meaning of the language in the standards supports a finding that its transoms and tanks did not contain Tectyl: “If the walls in a room are painted but the room is otherwise empty, no one would consider that the room ‘contains’ paint because the paint has become a permanent part of the room...[l]ikewise, the tectyl was a permanent part of the tanks.”

We are not persuaded by Trinity’s arguments. Setting aside the issue of whether a Tectyl-coated space can be said to “contain” liquid Tectyl, we find that the transoms of Barge B-133 clearly contained Stoddard solvent vapors, the gas produced during Tectyl’s curing process. As noted above, Slavings’ initial tests of the forward and aft transoms indicated that Stoddard solvent vapors were present in concentrations of 500 ppm and 400 ppm. Thus, when Trinity’s employees subsequently entered the transoms, the transoms were spaces that either contained or had contained Stoddard solvent vapors. The material safety data sheet (“MSDS”) and product information sheet for Tectyl indicate that these vapors are both combustible and toxic. We therefore find that the standards cited in items 2a, 2c, 2d and 2e apply to Trinity’s activities in the forward and aft transoms of Barge B-133.⁵

⁵ Trinity also argues that sections 1915.15(b) and (e), the standards cited in items 2f and 2g, do not apply to its activities because those standards, which require testing to maintain safe conditions, only apply when tests are first required by other standards. For the reasons just

Because we find that the cited standards apply to Trinity's activities based on the plain meaning of their language, we consider the regulatory history of the standards only to determine whether there is a clearly expressed intention contrary to that language. *Cf. Arcadian Corp.*, 17 BNA OSHC 1345, 1348, *aff'd* 110 F.3d 1192 (5th Cir. 1997) (where statutory language is clear, Commission looks to legislative history only to determine whether there is a "clearly expressed legislative intention" contrary to that language). We find that the regulatory history of the revised shipyard standards does not evidence such contrary intent. Indeed, based upon our reading of the 1994 amended final rule, we find that the Secretary clearly intended to expand coverage of the shipyard employment standards to include vessels under construction.⁶ In addition to deleting all references to "bulk" from the standards under which Trinity was cited and its definition from subpart B of the shipyard standards, the Secretary specifically added a definition of "space" which effectively broadened the scope of the subpart's requirements.⁷ The scope and application stated, we find that Trinity *was* required to conduct tests under other standards. In any event, even if we assume that the spaces in Barge B-133 never contained combustible or toxic materials, Trinity would still have been required to first test the spaces pursuant to section 1915.14(b)(1)(v), which requires competent person testing of land-side confined and enclosed spaces not requiring marine chemist certification.

⁶ The preamble to the Final Rule explained:

The scope contained in previous § 1915.11 applies the requirements in Subpart B to vessels and vessel sections found in shipyards during ship repair and ship breaking; § 1915.16 applies to ship repair only. On November 29, 1988, OSHA proposed to amend its shipyard standards addressing safe entry into and work within spaces containing explosive and other dangerous atmospheres on board vessels and vessel sections in shipyards (*53 FR 48092*). Under this proposal, OSHA would have applied Subpart B to all types of shipyard work on vessels and vessel sections, including ship building, ship repair, and shipbreaking. The Agency proposed extending the scope of Subpart B in this manner to protect employees entering and working in explosive and other dangerous atmospheres, regardless of the type of work they were performing.

59 Fed. Reg. 37,816, 37,822 cols. 2-3 (July 25, 1994).

⁷ Section 1915.11(b) defines "space" as follows:

Space means an area on a vessel or vessel section or within a shipyard such as, but not limited to: cargo tanks or holds; pump or engine rooms; storage lockers; tanks containing flammable or combustible liquids, gases or solids; rooms within buildings; crawl spaces; tunnels; or accessways. The atmosphere within a space is the entire area within its bounds.

subsection set forth at section 1915.11(a) was also revised to reflect this broader coverage: “This subpart applies to work in confined and enclosed spaces and other dangerous atmospheres in shipyard employment...” References to “cargo” in the final rule were also deleted from the testing-before-entry requirements of sections 1915.12(b)(1) and (c)(1).⁸ Although none of these changes appeared in the 1988 notice of public rulemaking, they were added to the final rule issued in 1994. As such, we place little weight on the statement from the 1988 proposed rule relied upon here by Trinity (“there is no change from the existing requirements”) as the basis for a limited application of the cited standards.

In addition, we note that in the preamble and proposed rules to the revised shipyard standards, OSHA states several times that it intends for coverage under the revised standards to be consistent with the scope of a national consensus standard published by the National Fire Protection Association (“NFPA”), NFPA 306, *Control of Gas Hazards on Vessels*. See 59 Fed. Reg. 37,823 (July 25, 1994), 53 Fed. Reg. 48,094 (November 29, 1988). NFPA 306 Chap. I-1 provides in pertinent part:

I-1 Scope.

....

I-1.2 This standard describes the conditions required before a space may be entered or work may be started on *any vessel under construction*, alteration, repair, or for shipbreaking.

(Emphasis added.) Because “any vessel under construction” clearly encompasses Barge B-133, Trinity’s activities on that barge would be covered under NFPA 306. Moreover, because the definition of “SAFE FOR WORKERS” in Chapter 2-3.1 of NFPA 306

⁸ The preamble noted:

The scope of subpart B is being expanded to address all confined and enclosed spaces and other dangerous atmospheres *throughout shipyard employment*. While the previous standard recognizes that the hazard of oxygen deficiency may be found in cargo spaces, many other confined and enclosed spaces in shipyard employment also pose this hazard. OSHA believes that it is essential that all such spaces be tested for oxygen content before entry to assure their safety. Therefore, the Agency is eliminating the reference to cargo spaces and is requiring all spaces containing materials or residues that could create an oxygen deficiency to be tested.

59 Fed. Reg. 37,816, 37,833 col. 1 (July 25, 1994) (emphasis added).

contemplates that atmospheres will be tested for flammability and for toxic materials associated with, among other substances, *tank coatings*,⁹ the NFPA standard requires atmospheric testing even in newly-constructed barge spaces in which a preservative coating like Tectyl has been applied. NFPA 306's requirement that atmospheric testing be conducted even in newly-constructed spaces with preservative coatings means that OSHA's stated intent to achieve consistency with that standard must be viewed as a statement of the agency's intent to require the same type of testing in the same spaces. Although Trinity points to several sections of the preamble and proposed rules that address the standards under which it was cited, and in which OSHA states that the revised standards make no changes in the spaces to be tested, this shows at most that there may be some inconsistency between the language upon which Trinity relies and the statements regarding OSHA's intent to follow NFPA 306. The language cited by Trinity does not change our view, expressed above, that in other parts of the regulatory history OSHA clearly expresses its intent to expand coverage under the shipyard standards to new construction.

Preemption

Trinity argues that the items alleging violations of sections 1915.12, 1915.14, and 1915.15 (Items 2a, 2c, 2d, 2e, 2f, 2g, 3a, 3b, and 3d) should all be dismissed because those sections are preempted by the welding in way of preservative coatings standard at section 1915.53 and are inapplicable as a matter of law. Trinity states that those items all allege deficiencies in its procedures for testing, training, and welding in an enclosed space where a preservative coating has been applied. Because these activities are specifically covered by section 1915.53, Trinity argues, the items should be dismissed.

We first address Trinity's argument that section 1915.12 is preempted by section 1915.53. Where a standard provides meaningful protection to employees beyond the protection afforded by another standard, there is no preemption. *Monitor Constr. Co.*, 16 BNA OSHC 1589, 1592, 1993-95 CCH OSHD ¶ 30,338, pp. 41,823-24 (No. 91-1807, 1994). Section 1915.12 pertains to "[p]recautions and the order of testing *before entering*

⁹ NFPA 306 Chapter 2-3.1 provides in pertinent part:

SAFE FOR WORKERS. Means that in the compartment or space so designated:

.....
(c)[] Any toxic materials associated with cargo, fuel, tank coatings, inerting mediums, or fumigants are within permissible concentrations at the time of the inspection[.]

confined and enclosed spaces.” (Emphasis added.) Section 1915.53, on the other hand, addresses one type of work employees might perform after they have entered such spaces. Thus, section 1915.12 provides protection to workers in addition to that afforded by section 1915.53 by requiring certain precautions and testing before workers even enter the confined or enclosed spaces in which they will be welding. *See Offshore Shipbuilding Inc.*, 18 BNA OSHC 2169, 2171-72, 2000 CCH OSHD ¶ 32,137, p. 48,433 (No. 99-257, 2000) (section 1915.12(d), which requires the training of employees *before* entering confined or enclosed spaces, not preempted by section 1915.51(c), which governs the activity of welding). Accordingly, we reject Trinity’s preemption argument as it pertains to items 2a, 2c, 2d, 3a, 3b, and 3d.

We also reject Trinity’s argument that section 1915.53 preempts sections 1915.14(a)(1)(i), 1915.15(b), and 1915.15(e), the three standards cited in items 2e, 2f, and 2g. Section 1915.14(a)(1)(i) provides protection beyond that afforded by section 1915.53 by requiring marine chemist certification, as opposed to competent person certification, of spaces that contain or have contained combustible or flammable liquids or gases.¹⁰ Sections 1915.15(b) and (e) likewise provide protection beyond that afforded by section 1915.53 by requiring, in certain situations, retesting to determine the air concentration of toxic or irritant materials. Although section 1915.53(d) requires that precautionary measures be taken before welding is commenced on surfaces covered with toxic preservatives, neither that section nor any other part of 1915.53 requires retesting to determine the air concentration of toxics.

Having disposed of Trinity’s applicability and preemption arguments, we turn now to the merits of the citation items on review.

Items 2a and 2c – Visual inspection for the presence of combustible liquids and toxic contaminants.

The cited standards, 1915.12(b)(1)(i) and (c)(1)(i), apply to spaces which contain or have contained certain hazardous materials, and require that a competent person visually inspect the spaces to determine the presence of combustible or flammable liquids and toxic, corrosive, or irritant residue contaminants. Section 1915.11(b) defines *visual inspection* as “the physical survey of the space, its surroundings and contents to identify hazards[.]” The Secretary argues that Trinity’s designated competent person, Slavings, was in fact not competent to make the visual inspections required by the standards, and also that Slavings’ assessment of the transoms was too cursory to be considered an “inspection” within the meaning of the standards. In addition, the Secretary argues that Slavings did not conduct visual inspections close enough to the time the welders entered the transoms of Barge B-133. The judge affirmed both violations, finding that Slavings lacked sufficient knowledge of the characteristics of Tectyl to conduct the required inspections.

¹⁰ The compliance assistance guidelines at 29 C.F.R. Part 1915, Subpart B, Appendix A also support a finding that section 1915.14(a) is not preempted by section 1915.53. With regard to sections 1915.14(a) and (b), the guidelines state: “This is a reminder that other sections of the OSHA shipyard safety and health standards in part 1915 should be reviewed prior to starting any hot work. Most notably, subpart D, Welding, Cutting and Heating, places *additional* restrictions on hot work: The requirements of §§ 1915.51 and 1915.53 must be met before welding, cutting, or heating is begun on any structural voids.” (Emphasis added.)

To prove a violation of a standard, the Secretary must establish that (1) the standard applies to the cited conditions; (2) the terms of the standard were not met; (3) employees had access to the violative conditions; and (4) the employer either knew of the violative conditions or could have known of them with the exercise of reasonable diligence. *Offshore Shipbuilding, Inc.*, 18 BNA OSHC at 2171, 2000 CCH OSHD at p. 48,443. For items 2a and 2c, we find that the Secretary has not carried her burden of proving that Trinity failed to comply with the cited standards.

With regard to the first issue raised by the Secretary, Slavings' testimony indicates that he knew the physical characteristics of Tectyl when it is "in the barrel," as it is curing, and after it has finally cured. Slavings knew that Tectyl's flash point is above 100 degrees and that it is a combustible liquid. Given this testimony, we find that Slavings was competent to visually inspect for the presence of Tectyl in Barge B-133.¹¹ The Secretary also argues that because Slavings did not know that Tectyl contains Stoddard solvent, he was not competent to visually inspect for the presence of the solvent. However, Slavings' testimony indicates that he knew liquid Tectyl contained some type of solvent, and we do not think that Slavings' inability to name a specific component of Tectyl can be reasonably construed as a violation of the standards.

The second issue raised by the Secretary is whether Slavings' assessment of the spaces was thorough enough to be considered an "inspection." The Secretary claims that Slavings' inspection of the forward and aft transoms in Barge B-133 was merely a "cursory look-see," and argues that "considerably more" is required under the standards. We are unable to find support in the record for this claim. Slavings testified that he "walk[s] the tanks, each one...what I'm doing is looking in the tank and then taking the readings too." The Secretary may now argue that Slavings' inspection of the transoms was cursory, but our review of the record indicates that she did not raise the thoroughness of his inspection as an issue at the hearing.

The final issue is whether Slavings' visual inspection was conducted close enough to the time the welders entered Barge B-133. The standards require that inspections be conducted "prior to entry" (subpart (b)(1)(ii)) or "prior to initial entry" (subpart (c)(1)(ii)) into covered spaces. The preamble to the 1994 amendments to the shipyard standards addresses the timing of inspections:

[Pre-entry] tests must be performed close enough to the time of entry to ensure that they accurately reflect conditions in the spaces. To meet this standard, testing will nearly always be done just prior to entry by employees; seldom will tests be performed prior to an hour before employees are to enter a space.

....

¹¹ In fact, Slavings almost certainly knew that Tectyl had been sprayed in Barge B-133 even before he entered the barge. Slavings testified that all of Trinity's barges have Tectyl applied to them. Before erection of a barge even begins, he explained, Tectyl is sprayed on the floor of the barge.

[However,] OSHA believes it is unnecessary to establish within the regulatory text of § 1915.12 a specific time limit beyond which the initial entry is not permitted after pre-entry testing. As noted in several comments, periods longer than 24 hours may be appropriate [in certain cases]. *OSHA has determined that the need for testing is directly related to the potential for change to occur within spaces.*

59 Fed. Reg. 37,832 (July 24, 1994) (emphasis added).

Here, Slavings inspected and tested the forward and aft transoms between 4:20 and 5:00 p.m. on March 8, 1995,¹² the welding crew entered the forward transom at 7:00 p.m., and Travis and Ivory began welding in the aft transom after the crew returned from dinner break at 8:00 p.m. Even though Slavings' inspection was conducted at least two hours before the welding crew entered each transom, we find that the Secretary has not established violations of the cited standards. As quoted above, the preamble states that "the need for testing is directly related to the potential for change to occur within spaces." The cited standards require visual inspection to determine the *presence* of combustible or flammable liquids and toxic, corrosive or irritant residues; thus, the need for testing under the standards is directly related to the potential for a change in the liquids or residues present in such spaces. The Secretary has not shown that there was any potential for such change or for any substances other than liquid Tectyl or Tectyl-related residues to be introduced into the transoms between the time of inspection and the time of entry. Thus, we find that Slavings' visual inspection was conducted close enough to the time the welders entered Barge B-133.

For all of the reasons discussed above, we reverse the judge and vacate items 2a and 2c.

Item 2d – Testing to determine the air concentration of toxics.

The cited standard, section 1915.12(c)(1)(ii), requires that the competent person test to determine the air concentration of toxics, corrosives, or irritants in spaces that contain or have contained such materials. The judge affirmed the violation, noting that Table Z in section 1915.1000 establishes a permissible exposure limit ("PEL") for Stoddard solvent of 200 ppm for an eight-hour time weighted average ("TWA"). In this case, Slavings' initial tests in Barge B-133 indicated Stoddard solvent levels of 500 ppm in the forward transom and 400 ppm in the aft transom. Slavings retested the aft transom

¹² Slavings retested the aft transom approximately 30 to 45 minutes later but did not retest the forward transom.

after it had been ventilated and obtained a explosive limit (“LEL”) reading of zero, but never retested the forward transom and left the shipyard before ventilation had been applied to that transom. The judge concluded that Slavings failed to test the enclosed spaces as required by section 1915.12(c)(1)(ii). We affirm the judge’s finding.

Trinity argues that section 1915.12 does not mandate testing immediately prior to welding, pointing to OSHA’s statement in the preamble that “the need for testing is directly related to the potential for change to occur within spaces.” 59 Fed. Reg. 37,832 (July 25, 1994). Trinity maintains that because conditions in the transoms could only have stayed the same or improved with the passage of time, Slavings’ tests were conducted close enough to the time of entry to ensure that conditions were safe. In any event, Trinity argues, the eight-hour TWA for Stoddard solvent applicable to its activities on March 8, 1995, was 500 ppm — the value listed in Table Z-1 of the general industry standards at 29 C.F.R. Part 1910; not 200 ppm — the value listed in Table Z of the shipyard standards. Trinity notes that the values listed in Table Z of the shipyard standards are based on the 1970 threshold limit values published by the American Conference of Governmental Industrial Hygienists (“ACGIH”). According to Trinity, at the time of the accident section 1915.5 limited application of the 1970 ACGIH values to two shipyard standards, sections 1915.12(a)(3) and 1915.32(b). Because it was not cited under either of those standards, Trinity argues, the general industry TWA for Stoddard solvent of 500 ppm applied to its activities. Therefore, Slavings’ reading of 500 ppm for Stoddard solvent vapors in the forward transom did not indicate that a toxic gas was present above its PEL.

We reject Trinity’s argument that section 1915.5 limited application of the 1970 ACGIH threshold values to sections 1915.12(a)(3) and 1915.32(b). At the time of the accident, section 1915.5 plainly stated that the 1970 ACGIH values applied not only to those two standards but also to section 1915.12(b)(3):

Threshold Limit Values, 1970, American Conference of Governmental Industrial Hygienists...subpart B, § 1915.12(a)(3) and (b)(3); subpart C, § 1915.32(b). These threshold limit values are contained in § 1915.1000, Table Z.

29 C.F.R. § 1915.5 (1994).¹³ Prior to the 1994 amendments to the shipyard standards, section 1915.12(b) addressed precautions to be taken before entering toxic atmospheres, and the standard at 1915.12(b)(3) set forth requirements for work in atmospheres with levels of toxic contaminants above the threshold limit value. Pursuant to the amendments, section 1915.12 was reformatted so that toxic atmospheres are now covered under section 1915.12(c). 59 Fed. Reg. 37,831 (July 25, 1994). In the present case, item 2d alleges that Trinity violated the standard at 1915.12(c)(1)(ii), which requires testing to determine the air concentration of toxic contaminants. Trinity's argument that OSHA did not intend for the 1970 ACGIH values to apply to testing under the cited standard therefore fails.

Even if we were to assume that the applicable TWA for Stoddard solvent was 500 ppm, not 200 ppm, we conclude that the judge correctly found a violation of the standard. Slavings tested the atmosphere inside the forward transom of Barge B-133 only once, almost immediately after the painters finished their work in the barge. Because Tectyl has a 24-hour curing time, Stoddard solvent vapors would have continued to be produced even after his test. Although Slavings testified that the conditions in the transom should not have changed as time passed, he qualified his testimony by stating, "*If they had the ventilation going and everything, like the instructions said, then it wouldn't have changed.*" (Emphasis added.) Importantly, Slavings did not remain at the shipyard to ensure that Trinity's employees ventilated the forward transom. We further note that Slavings' failure to retest the atmosphere in the forward transom was inconsistent with Trinity's own policy, which required retesting until readings showed a vapor level of zero.

We also find that Trinity had knowledge of the testing violation because Slavings was its designated competent person.¹⁴ Slavings was trained by Trinity to conduct the atmospheric tests required by the shipyard standards, had the responsibility to perform those tests, and had the authority to take corrective measures to eliminate hazards, such as directing that ventilation be applied to tested spaces or calling for marine chemist

¹³ Trinity's statement that section 1915.5 limited application of the 1970 ACGIH values to sections 1915.12(a)(3) and 1915.32(b) may be based on what appears to be a typographical error in the Federal Register of July 1, 1993, resulting in the omission of "(b)(3)" from the restatement of the pre-existing and unchanged applicability statement in one paragraph of section 1915.5. 58 Fed. Reg. 35,514 (July 1, 1993). The only substantive effect of the relevant amendment was to add a sentence to the end of the affected paragraph, after the applicability statement. This error appears only in the Federal Register, not in prior or subsequent editions of the Code of Federal Regulations.

¹⁴ Section 1915.4(o) defines a competent person as follows:

The term COMPETENT PERSON for purposes of this part means a person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees as required by the particular regulation under the condition to which it applies. For the purposes of Subparts B, C, and D of this part, except for

§ 1915.35(b)(8) and § 1915.36(a)(5), to which the above definition applies, the competent person must also meet the additional requirements of § 1915.7.

certification of such spaces. *See Globe Contractors, Inc. v. Herman*, 132 F.3d 367, 373 (7th Cir. 1997) (foreman's conduct as competent person properly imputed to employer); *Rawson Contrac., Inc.* OSHRC Docket No. No. 99-0018 (April 4, 2003), slip op. at pp. 3-4 (foreman's status as designated competent person of "decisive significance" in attributing knowledge to employer). Accordingly, we affirm a violation of § 1915.12(c)(1)(ii).

Item 2e – Marine chemist certification of spaces that contain or have contained combustible or flammable liquids or gases.

Section 1915.14(a)(1)(i) requires that, before hot work is performed in spaces which contain or have contained combustible or flammable liquids or gases, the spaces be tested and certified by a marine chemist or Coast Guard authorized person as "Safe for Hot Work." However, subpart (a)(1)(iv) of section 1915.14 contains an exception to those requirements:

(iv) Exception: On dry cargo, miscellaneous and passenger vessels and in the landside operations within spaces which meet the standards for oxygen, flammability and toxicity in § 1915.12, but are adjacent to spaces containing flammable gases or liquids, as long as the gases or liquids have a flash point below 150° F (65.6° C) and the distance between such spaces and the work is 25 feet (7.5m) or greater.

The judge found that the Secretary failed to show that the atmosphere inside Barge B-133 fell outside the levels for oxygen, flammability and toxicity in section 1915.12, and concluded that the record failed to establish the need for marine chemist certification.

On review, the Secretary argues that the judge erred in finding that Trinity met the exception in subpart (a)(1)(iv) because he ignored the requirement that, when hot work is performed in spaces adjacent to those containing flammable gases or liquids, "the distance between such spaces and the work [be] 25 feet (7.5m) or greater."¹⁵ The Secretary notes that in the present case Trinity's employees welded directly within and on enclosed, Tectyl-coated spaces. We find the Secretary's argument convincing and note that Trinity has not addressed the merits of item 2e on review. Because there is no evidence that Barge B-133 was tested and certified by a marine chemist or Coast Guard authorized person as "Safe for Hot Work," we find that Trinity failed to comply with the standard. Because Trinity's designated competent person, Slavings, had the authority and responsibility to call for marine chemist certification, we further find that Trinity had

¹⁵ The judge did not explicitly find that Trinity met the exception in (a)(1)(iv), but we agree with the Secretary that this finding is implied by his decision to vacate item 2e.

knowledge of this violation. Accordingly, we reverse the judge and affirm a violation of §1915.14(a)(1)(i).

Items 2f and 2g – Maintenance of Safe Conditions

Item 2f alleges that Trinity violated section 1915.15(b)¹⁶ because welding could have altered conditions in the transoms of Barge B-133 and Trinity failed to retest those spaces. Item 2g alleges that Trinity violated section 1915.15(e)¹⁷ because a competent person did not continue to test the bulkheads of Barge B-133 “as often as necessary to ensure that the required atmospheric conditions within the space are maintained.” Under both items, the Secretary alleges that retesting was necessary because welding could have altered conditions in the transoms, basing her argument on the testimony of Malcolm Fontenette, Trinity’s Marine Group Safety Manager. Although Fontenette testified that based on 30 to 40 tests he conducted, welding on Tectyl did not change conditions inside transoms, he acknowledged that welding in enclosed spaces could possibly change atmospheric conditions.

The Secretary may establish knowledge by showing that the employer either knew or with the exercise of reasonable diligence could have known of the non-complying condition. *Secretary of Labor v. Milliken Co.*, 14 BNA OSHC 2079, 2083, 1991-93 CCH OSHD ¶ 29,243, p. 39176 (No. 84-767, 1991) *aff’d* 947 F.2d 1483 (11th Cir. 1991). We

¹⁶ Section 1915.15 provides:

(b) *Alteration of existing conditions.* When a change that could alter conditions within a tested confined or enclosed space or other dangerous atmosphere occurs, work in the affected space or area shall be stopped. Work may not be resumed until the affected space or area is visually inspected and retested and found to comply with §§ 1915.12, 1915.13, and 1915.14 of this part, as applicable.

Note to paragraph (b): Examples of changes that would warrant the stoppage of work include: The opening of manholes or other closures or the adjusting of a valve regulating the flow of hazardous materials.

¹⁷ Section 1915.15(e) provides:

(e) *Tests to maintain a competent person's findings.* After a competent person has conducted a visual inspection and tests required in §§ 1915.12, 1915.13, and 1915.14 of this part and determined a space to be safe for an employee to enter, he or she shall continue to test and visually inspect spaces as often as necessary to ensure that the required atmospheric conditions within the tested space are maintained.

find that the facts of the present case are similar enough to those of another case involving Trinity — *Trinity Industries Inc. v. OSHRC*, 206 F.3d 539 (5th Cir. 2000) — to support the conclusion that in the instant case, Trinity did not have knowledge of the cited violation. *Trinity* involved an OSHA inspection of an Alabama plant where Trinity manufactures and repairs railcars and lines new hopper railcars by spraying the insides of the cars with a protective chemical coating. The citation in that case alleged that a hazardous atmosphere existed in one railcar because an OSHA inspector detected levels of flammable vapors in excess of the lower explosive limit (“LEL”). Addressing the knowledge issue, the court found: “[T]he most thorough evidence of the vapor levels remains the extensive testing conducted by Trinity as described by sworn testimony of the railroad safety experts who conducted the tests...[o]n the basis of this evidence, we find that the Secretary failed in its burden of proving that Trinity knew or should have known that the levels in the railcars were improper.” *Id.* at 543. The testimony to which the court refers is a statement from Trinity’s former corporate and environmental director that over a ten year period he had tested more than a thousand railcars during the actual lining operation while they were being ventilated, and he had never obtained a reading over ten percent of LEL no matter what lining material was used. The director added that during that ten-year period he had tested about sixty railcars at Trinity’s Alabama plant. *Id.* at 541.

In the present case, the Secretary relies on marine safety manager Fontenette’s acknowledgment that welding can change atmospheric conditions in an enclosed space. We note, however, that the cited part of Fontenette’s testimony is only a general acknowledgment that welding *could* change conditions. Fontenette subsequently testified that, based on 30 to 40 tests he conducted prior to March 8, 1995, welding on Tectyl did *not* change conditions inside transoms. Slavings also testified that prior to March 8, 1995, he had conducted tests while plates were being welded in tanks and found no change in conditions. Slavings said that he conducted some of those tests three to five hours after Tectyl had been applied. We find that the number of tests conducted by Fontenette and Slavings compares favorably with the 60 tests of railcars conducted at Trinity’s Alabama plant, which formed part of the basis for the Fifth Circuit’s finding that the Secretary had not established knowledge of the violation at that plant. Because Trinity is headquartered in Texas, within the Fifth Circuit, and because the Fifth Circuit’s decision in *Trinity*

indicates that the court would find a lack of knowledge where repeated prior testing gives the employer no reason to conclude that it may be in violation of a standard, we vacate items 2f and 2g. *See, e.g., Kern Brothers Tree Service*, 18 BNA OSHC 2064, 2067, 2000 CCH OSHD ¶ 32,053, p. 48,003 (No. 96-1719, 2000) (where it is highly probable that a case will be appealed to a particular circuit, the Commission generally has applied the law of that circuit in deciding the case).¹⁸

Items 3a, 3b and 3d – Training of employees entering enclosed spaces.

Items 3a, 3b, and 3d allege that Trinity violated various standards in section 1915.12(d) by failing to train the employees who were performing hot work inside the forward and aft transoms of Barge B-133. Section 1915.12(d) provides in pertinent part:

(2) The employer shall ensure that each employee who enters a confined space, enclosed space, or other areas with dangerous atmospheres is trained to:

....

(ii) Anticipate and be aware of the hazards that may be faced during entry;

(iii) Recognize the adverse health effects that may be caused by the exposure to a hazard;

....

(4) The employer shall provide each employee with training:

....

(ii) Whenever there is a change in operations or in an employee's duties that presents a hazard about which the employee has not previously been trained.

¹⁸ We question whether section 1915.15(b) even applies to the facts of the present case. As noted above, the Secretary argues that a change in conditions occurred when Trinity's employees started welding in the forward and aft transoms of Barge B-133. However, the language of the standard strongly suggests that the actual work that employees are performing in an enclosed space is not a "change that could alter conditions," especially given the requirement that "work...shall be stopped" when a change occurs. The note to paragraph (b) of section 1915.15 supports this interpretation, providing two examples of changes in working conditions, the opening of manholes and the closure or adjusting of a valve regulating the flow of hazardous materials. These examples support a conclusion that, while other standards are directed toward atmospheric or other changes caused by work in enclosed spaces, the standard at section 1915.15(b) is directed toward the conditions under which work is performed, not the work itself. Also, because the standard requires that work be stopped whenever there is a change that could alter conditions, the Secretary's argument that welding represents a change in conditions, taken to its logical conclusion, could lead to the absurd result that welding would no sooner commence than it would have to be stopped for inspection and retesting.

Item 3a alleges that employees were performing a new task — welding gusset plates onto Tectyl-coated steel — and that Trinity violated section 1915.12(d)(2)(ii) by failing to ensure that the employees were trained to anticipate and be aware of hazards they might face during entry into an enclosed space. Item 3b alleges that Trinity violated section 1915.12(d)(2)(iii) by failing to ensure that employees were familiar with potential health hazards associated with welding gusset plates onto Tectyl-coated steel. Finally, item 3d alleges that welding gusset plates onto Tectyl-coated steel was a non-routine task, and that Trinity violated section 1915.12(d)(4)(ii) by failing to provide employees with training when there was a change in duties that presented a hazard about which they had not previously been informed. The judge affirmed all three violations.

Evidence of Training

Training reports introduced by Trinity show that employees at the Caruthersville shipyard had been trained on the hazards of working in confined spaces, hot work in confined spaces, and the use of personal protective equipment on a number of occasions prior to March 8, 1995. All members of the welding crew in Barge B-133 on the night of March 8, 1995, received training in those areas.¹⁹ Curtis Chambers, Trinity's OSHA compliance manager, Chester Sullivan, the plant safety manager at Caruthersville, and marine safety manager Fontenette all testified that Trinity trained its employees not to enter tanks until they had been tested and a hot work permit issued and to wear respirators and ventilate tanks to protect against welding fumes. Employees also had been trained to use a fire watch when welding, and to wear all-cotton clothing to guard against contact with welding sparks and slag. Fontenette, Chambers, and Sullivan further testified that Trinity cross-trained employees on the hazards of all jobs at the Caruthersville shipyard. Testimony from several employees, including welders Anthony Quinn and Elmer Jones from the Barge B-133 crew, indicates that the welders in Barge B-133 knew that Tectyl presented a fire hazard. With regard to potential toxicity problems related to Tectyl, Slavings, the competent person, testified that employees had been trained to remove preservative coatings six inches on each side of the point of welding. Sullivan also testified that during HAZ/COM training employees are taught to refer to a chart that informs them of the toxicity, flammability, and reactivity of chemicals they might encounter.

On the other hand, Sullivan admitted that he did not personally know Tectyl's curing time and did not set any guidelines for how long the coating had to cure before employees could enter Tectyl-coated spaces. Both painter David Norman and welder Elmer Jones, a member of the Barge B-133 crew, testified that they thought Tectyl could cure in as little as four or five hours. Jones testified that he knew Tectyl could burn but had not been told that Tectyl could irritate the eyes and skin. He said that he had not been shown Tectyl's MSDS and that safety meetings did not cover Tectyl specifically. Several

¹⁹ The welding crew consisted of the decedents, John Travis and Wayne Ivory, as well as welding lead man Rodney Quinn and welders Anthony Quinn, Glen Hyde, Elmer Jones, Russell Hull and Daniel Flowers.

other members of the welding crew in Barge B-133 testified that they had not been provided certain information on Tectyl.

Rodney Quinn, welding entry supervisor for the Barge B-133 crew, testified that he had not seen Tectyl's MSDS prior to beginning work on March 8, 1995. He knew that Tectyl was combustible but did not know its flash point. Rodney Quinn said that he knew that smoke from welding on Tectyl could irritate the eyes but "didn't really know about if you get i[t] on you[.]" Welder Anthony Quinn testified that he normally welded on metal without a preservative coating and had not reviewed Tectyl's MSDS prior to beginning work in Barge B-133. Anthony Quinn further testified that "[t]he only instructions or specifications that we went over was that we needed to be careful because we were working in Tectyl...[t]hat with Tectyl, there could be a danger of fire." Anthony Quinn said that entry supervisor Rodney Quinn did not discuss the physical and health hazards of Tectyl, other than its flammability. He said that there was no discussion about whether Tectyl could irritate the eyes and skin and that he had not been told Tectyl's flash point.

Discussion

To establish noncompliance with a training standard, the Secretary must show that the employer failed to provide instructions that a reasonably prudent employer would have given in the same circumstances. *See Archer-Western Contractors Ltd.*, 15 BNA OSHC 1013, 1019- 20, 1991-93 CCH OSHD ¶ 29,317, p. 39,381 (No. 87-1067, 1991), *aff'd in unpublished opinion* (D.C. Cir. 1992); *El Paso Crane and Rigging Co.*, 16 BNA OSHC 1419, 1424, 1993-95 CCH OSHD ¶ 30,231, p. 41,620 (No. 90-1106, 1993). If the employer rebuts the allegation of a training violation "by showing that it has provided the type of training at issue, the burden shifts to the Secretary to show some deficiency in the training provided." *American Sterilizer Co.*, 18 BNA OSHC 1082, 1086, 1995-97 CCH OSHD ¶ 31,451, p. 44,484 (No. 91-2494, 1997); *Atlantic Battery Co.*, 16 BNA OSHC 2131, 2176-77, 1993-95 CCH OSHD ¶ 30,636, p. 42,493 (No. 90-1747, 1994).

We find that the Secretary has failed to establish a violation of section 1915.12(d)(2)(ii), the standard cited in item 3a. The standard requires that employers train employees to "[a]nticipate and be aware of the hazards that may be faced during entry" into an enclosed space. Although several employees testified that they did not know Tectyl's curing time or thought Tectyl could cure in as little as four or five hours, the record establishes that Trinity's employees knew Tectyl was combustible and presented a

fire hazard. They had specifically been trained not to enter tanks until a hot work permit was issued; use a fire watch when welding; wear all-cotton clothing; ventilate tanks; and remove preservative coatings from the point of welding.

The Secretary argues that Trinity's training was deficient because employees were performing a non-routine task – welding gusset plates inside transoms recently coated with Tectyl – but she fails to explain why Trinity's employees were unable to anticipate the hazards of welding in Barge B-133. Although several members of the welding crew in Barge B-133 had not been shown Tectyl's MSDS, the Secretary fails to explain exactly what information in the MSDS Trinity's employees needed in order to anticipate the hazards of the welding job. In fact, it is Tectyl's product information sheet, not the MSDS, that contains the bold warning regarding the hazards of welding on the partially cured coating. Our review of the testimony indicates that the Secretary did not ask employees directly whether Trinity had communicated to them the warning in Tectyl's information sheet. *See N&N Contractors Inc.*, 18 BNA OSHC 2121, 2128, 2000 CCH OSHD ¶ 32,101, p. 48,244 (No. 96-606, 2000), *aff'd* 255 F.3d 122 (4th Cir. 2001) (absence of direct employee testimony that employees did not receive training was critical to Secretary's failure to meet her burden). Thus, we find that the Secretary has failed to meet her burden of showing that Trinity's training was deficient for the reasons stated in item 3a, and we vacate that item.

On the other hand, the evidence supports a finding that Trinity violated section 1915.12(d)(iii), the standard cited in item 3b. Welders Anthony Quinn and Elmer Jones, members of the Barge B-133 crew, were asked directly whether they had been told about the physical and health effects of Tectyl, including possible eye and skin irritation, and each employee testified that he had not been told of those effects. Welding entry supervisor Rodney Quinn testified that he knew Tectyl could irritate the eyes, but “didn't really know about if you get [Tectyl] on you[.]” Trinity notes that employees working with Tectyl were required to wear Tyvex suits, rubber gloves, and paint socks over their faces. However, the cited standard requires training so that employees can recognize the *health effects* that may be caused by exposure to a hazard – training on hazard avoidance is covered in other standards. Plant safety manager Sullivan testified that as part of their HAZ/COM training employees are taught to refer to a chemical toxicity chart, but this

chart would not have informed employees of health effects specific to Tectyl. Because Trinity failed to train employees on certain health effects of Tectyl, we affirm item 3b.

Item 3d alleges a violation of section 1915.12(d)(4)(ii), which requires training “[w]henver there is a change in operations or in an employee’s duties that presents a hazard about which the employee has not previously been trained.” The Secretary argues that the welding job in Barge B-133 represented a change in duties for certain employees, such as Anthony Quinn, who did not normally weld in enclosed spaces or on preservative coatings. We agree, but find that the only training deficiency established by the Secretary – the only deficiency which supports the allegation in item 3d – is Trinity’s failure to train employees on Tectyl’s potential for eye and skin irritation. Because this failure duplicates that alleged and established under item 3b, we vacate item 3d. *See Capform*, 13 BNA OSHC 2219, 2224, 1987-90 CCH OSHD ¶ 28,503, p. 37,778 (No. 84-55, 1989) (citations duplicative where they involve substantially the same violative conduct and require the same means of abatement), *Cleveland Consolidated, Inc.*, 13 BNA OSHC 1114, 1118, 1986-87 CCH OSHD ¶ 27,829, p. 36,430 (No. 84-696, 1987).

Item 3e – Training on physical and health hazards of Tectyl.

Item 3e alleges that Trinity violated section 1915.1200(h)(2)(ii) by failing to train employees on the physical and health hazards of Tectyl. Section 1915.1200(h)(2) incorporates by reference the requirements of the general industry standard at 29 C.F.R. § 1910.1200(h)(2), which states:

(2) *Information.* Employees shall be informed of:

(i) The requirements of this section;

(ii) Any operations in their work area where hazardous chemicals are present; and,

(iii) The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.

The Secretary argues that the judge’s finding of a violation should be affirmed, citing testimony from Rodney Quinn and other crew members that they had not been provided certain information about Tectyl and had never seen its MSDS as part of their training. The Secretary claims that in several other cases the Commission has affirmed violations of section 1910.1200(h) where employees have been similarly deprived of

information concerning chemical hazards in their workplace, including *Safeway Store No. 914*, 16 BNA OSHC 1504, 1513-14, 1993-95 CCH OSHD ¶ 30,300, p. 41,745-47 (No. 91-373, 1993); *Article II Gun Shop Inc.*, 16 BNA OSHC 2035, 2037, 1993-95 CCH OSHD ¶ 30,563, p. 42,300-01 (Nos. 91-2146 and 91-3127, 1994); and *ARA Living Centers of Texas*, 15 BNA OSHC 1417, 1418, 1991-93 CCH OSHD ¶ 29,552, p. 39,957 (No. 89-1894, 1991).

The cited standard, section 1910.1200(h)(2)(ii), requires that employers inform employees of “[a]ny operations in their work area where hazardous chemicals are present,” while sections 1910.1200(h)(2)(i) and (iii) set forth other information requirements. Section 1910.1200(h)(3), on the other hand, sets forth requirements for employee training on hazardous chemicals. In particular, section 1910.1200(h)(3)(ii) requires training on the “physical and health hazards of the chemicals in the work area.” In our view, the deficiencies alleged by the Secretary fall not under 1910.1200(h)(2)(ii), but under other parts of 1910.1200(h), particularly 1910.1200(h)(3)(ii). For example, although Rodney Quinn testified that he had not seen Tectyl’s MSDS as part of his training, material safety data sheets are addressed in 1910.1200(h)(2)(iii), not in subpart (ii). Also, the three cases cited by the Secretary address violations of 1910.1200(h) generally. In none of those cases did the Commission specifically affirm a violation of 1910.1200(h)(2)(ii), or affirm a violation because the employer failed to provide employees with information on the *location* of hazardous chemicals. Thus, the cited cases do not support a finding that the deficiencies alleged by the Secretary constitute a violation of 1910.1200(h)(2)(ii).

The next issue is whether Trinity provided its employees with information on the location of hazardous chemicals, as required by the cited standard. Based on our review of the record, we find that the welders in Barge B-133 on the night of March 8, 1995, were aware that Tectyl had been applied inside the barge’s tanks and transoms before they started work. Welding entry supervisor Rodney Quinn testified that he knew the barge had been treated with Tectyl. Welder Elmer Jones testified that before the welding crew could begin work on Barge B-133 on March 8, 1995, they had to wait until the painters got through “oiling” the barge, a term which referred to the spraying of Tectyl. In any event, the Secretary did not introduce evidence that any member of the welding crew in Barge B-133 had not been informed that Tectyl was present in the barge. For these

reasons, we find that the Secretary has not established a violation of section 1915.1200(h)(2)(ii), and we vacate item 3e.

Item 6a – Fire prevention.

The Secretary cited Trinity for one violation of the fire prevention standard at section 1915.52(a)(2), alleging that employees in the forward and aft transoms of Barge B-133 were welding “without any positive means to prevent sparks from contacting the combustible substance, such as the use of drapes, curtains, or inerting the floor surface with a water bottom.”²⁰ The judge affirmed the violation, noting that the hot work permit prepared by Slavings on March 8, 1995, required the use of fire-resistant tarpaulins and that the floor be wet down and covered with sand or fire-resistant sheets. These protective measures were not taken.

On review, Trinity argues that the use of a water bottom would have presented a greater hazard for its employees because of the risk of electrocution. Trinity does not, however, argue that drapes or curtains, the two other means of fire prevention described in the citation, would also have presented a greater hazard or were infeasible. As the judge found, the hot work permit for Barge B-133 prepared by Slavings actually required that non-removable combustibles be protected with fire-resistant tarpaulins or metal shields and that fire-resistant tarpaulins be suspended beneath work. Given that Trinity’s own competent person recognized the need for tarpaulins or shields, we find that Trinity violated the terms of section 1915.52(a)(2).²¹

²⁰ Section 1915.52(a)(2) provides:

If the object to be welded, cut or heated cannot be moved and if all the fire hazards including combustible cargoes cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.

²¹ Though not disputed by Trinity on review, we also find that Trinity had knowledge of the fire prevention violation. *See Trinity*, 206 F.3d at 542 (addressing knowledge issue even though respondent failed to raise issue before Commission). Rodney Quinn was identified by plant safety manager Sullivan as the entry supervisor for the welding crew in Barge B-133. According to Trinity’s Confined Space Entry Program, the entry supervisor “verifies that the [hot work] permit is filled out completely and all safety steps listed on it are taken...” Trinity’s program also requires the entry supervisor to check conditions during entry “to make sure that [conditions] stay safe throughout the work.” Here, Quinn was with the crew in the forward transom and would have known that the welders in that transom were working without drapes, tarpaulins, or shields. Although it is not clear that Quinn actually entered the aft transom where Travis and Ivory were welding, he was aware of the conditions

Item 6d – Welding in way of preservative coatings.

Item 6d alleges that Trinity violated section 1915.53(f),²² which applies when “welding...is commenced in enclosed spaces on metal covered by soft and greasy preservatives,” because the competent person did not test for flammable vapors after employees began welding on Tectyl-coated steel. We find that the Secretary has not established the standard’s applicability because she has not shown that Tectyl is a “soft and greasy” preservative. Tectyl’s product information sheet states that the “dry film is *firm*, amber, and translucent.” (Emphasis added.) Regis Rumpf of Valvoline testified that Tectyl is “difficult” to remove from metal surfaces and, once cured, can only be removed “by steam and special chemistry.”²³

Even if Tectyl could be considered “greasy” for some short period of time after it has been applied to a surface – competent person Slavings testified that Tectyl is “oily, kind of a diesel fuel type...[w]hen it’s in the barrel” – the Secretary has not established that the Tectyl on which Trinity’s employees were welding was “soft and greasy.” According to its product information sheet, Tectyl’s “Approximate Dry to Touch Time”

in that transom, as indicated by his testimony that he “didn’t want [Travis and Ivory] welding without a blower...[w]e got them to blower [sic] down on the aft transom also.” Because Quinn was designated by Trinity as the entry supervisor for the welding crew and because under Trinity’s Confined Space Entry Program the entry supervisor has broad responsibility for employee safety, we impute Quinn’s knowledge to Trinity. *See Rawson Contrac. Inc.*, OSHRC Docket No. 99-0018 (April 4, 2003), slip op. at pp. 3-4 (imputing knowledge of designated competent person and foreman to employer).

²² Section 1915.53(f) provides:

(f) Immediately after welding, cutting or heating is commenced in enclosed spaces on metal covered by soft and greasy preservatives, and at frequent intervals thereafter, a competent person shall make tests to ensure that no flammable vapors are being produced by the coatings. If such vapors are determined to be present, the operation shall be stopped immediately and shall not be resumed until such additional precautions have been taken as are necessary to ensure that the operation can be resumed safely.

²³ We note that section 1915.34(b)(2) expressly forbids the use of heat to remove soft and greasy preservative coatings. However, several of the methods for removing Tectyl recommended in its product information sheet – vapor degreasing, hot alkaline wash, and low pressure steam – involve the use of heat. This means either that the information sheet’s recommendations are inconsistent with OSHA regulations or, as we find, that Tectyl is not a soft and greasy preservative.

is one hour.²⁴ In the present case, employees did not begin welding in the transoms of Barge B-133 until at least an hour and a half after the painters finished spraying Tectyl. Although IH Grogg testified that the Tectyl she observed on the floor of the aft transom during the OSHA inspection was “greasy,” Grogg admitted that it was dark when she inspected the aft transom and the appearance of the Tectyl may have been affected by the lack of lighting. Chambers, Trinity’s manager for OSHA compliance, testified that Tectyl appearing in a photograph taken by Grogg of the aft transom floor was not greasy but “sticky” and that it merely appeared shiny from the flash of the camera. Thus, we find that the Secretary has not established the applicability of section 1915.53(f), and we vacate item 6d.

Characterization

A violation is willful if it is committed with intentional, knowing, or voluntary disregard for the requirements of the Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678, or with plain indifference to employee safety. *See, e.g., Williams Enterprises Inc.*, 13 BNA OSHC 1249, 1256-57, 1986-87 CCH OSHD ¶ 27,893, p. 36,589 (No. 85-355, 1987). Proof of something more than mere knowledge of a hazard is required to establish a willful violation. *St. Joe Minerals Corp. v. OSHRC*, 647 F.2d 840, 847-48 (8th Cir. 1981). The Secretary must show that the employer had a “heightened awareness” of the illegality of the conduct at issue. *See, e.g., Pentecost Contracting Corp.*, 17 BNA OSHC 1953, 1955, 1995-97 CCH OSHD ¶ 31,289, p. 43,965 (No. 92-3788, 1997). Good faith efforts at compliance can negate willfulness provided that they are objectively reasonable under the circumstances. *Tampa Shipyards, Inc.*, 15 BNA OSHA 1533, 1541, 1991-93 CCH OSHD ¶ 29,617, p. 40,104 (Nos. 86-360 & 86-469, 1992).

The judge affirmed the violations alleged in Citation 2 as willful, finding that Trinity’s failure to comply with the cited standards demonstrated plain indifference to its safety obligations. The judge noted that, although Trinity is a large company with an

²⁴ According to Rumpf, Tectyl’s curing time assumes a temperature of 77 degrees Fahrenheit and 50 percent relative humidity, with a lower temperature delaying and lower humidity accelerating curing to some extent. Although the temperature at the Caruthersville shipyard on the night of March 8, 1995, was approximately 28 degrees, Rumpf suggested that, because it was still winter, the humidity may have been relatively low.

experienced safety department and knowledge of OSHA standards, in this case Trinity failed to follow its own written safety programs. The Secretary argues that Trinity's actions demonstrated plain indifference to employee safety because the Hot Work Permit posted by Slavings, the competent person, was "grossly deficient of the required information and made no mention of the hazards associated with welding on Tectyl." She also argues that Trinity sent an inexperienced crew to perform the welding in Barge B-133 despite knowing that Tectyl could cause atmospheric changes during its curing process. We find that the evidence cited by the judge and Secretary fails to support the willful characterization of the four items we affirm.

Items 2d and 2e involve violations of standards requiring atmospheric testing of spaces prior to entry and hot work. Trinity violated these standards because its competent person did not retest the forward transom of Barge B-133 to determine the air concentration of toxics, and because the competent person failed to call for marine chemist certification of the forward and aft transoms prior to hot work. We find no evidence, however, that the violations reflect indifference to worker safety. To the contrary, the testimony of Fontenette, Trinity's Marine Division Safety Manager, establishes that Trinity has a comprehensive training program for competent persons. Fontenette testified that new competent persons receive ten to twelve hours of training. Fontenette said that he personally trains new competent persons using a manual which covers subjects listed in Trinity's written Permit Space Entry Program, including "Identifying Permit Space Hazards," "Testing for Acceptable Entry Conditions," and "Training and Duties of Entry Personnel." Each competent person is given his own copy of the manual, and during training the competent persons are tested on the subjects in the manual. Fontenette said that competent persons also watch videos on various training subjects and receive hands-on instruction in the use of meters.

Fontenette also testified that he monitors the work of competent persons after they have been trained, making occasional on-site visits to Trinity's shipyards for that purpose. In the fall of 1994, he visited the Caruthersville shipyard and talked to Slavings "in some detail" about his competent person duties. Fontenette also indicated that he monitored Slavings' work by phone, stating that he made "numerous" calls to Caruthersville after he trained Slavings as a competent person. Further, Fontenette testified that he attends seminars on the requirements for competent person training almost every year and that he

provides competent persons with updates whenever he receives information that has a bearing on their job duties.

Slavings corroborated Fontenette's testimony regarding the extent and nature of Trinity's competent person training program. He stated that he received approximately twelve hours of training that covered the subjects listed in Trinity's competent person training manual. Slavings also confirmed that the training program, which he completed successfully, consisted of lectures, videos, hands-on training with a meter, and a test. Based on this evidence regarding Trinity's competent person training program, we find that Trinity's noncompliance with the standards cited in items 2d and 2e does not rise to the level of plain indifference.

Although a supervisor's willful actions may be imputed to an employer, *e.g.*, *Globe Contractors, Inc. v. Herman*, 132 F.3d 367, 373 (7th Cir. 1997), we find that, in the present case, the Secretary has not established that Slavings' failure to retest the forward transom of Barge B-133 and call for marine chemist certification of both transoms was willful. The Secretary bears the burden of proving her case by the preponderance of the evidence. *Astra Pharmaceutical Prods. v. OSHRC*, 9 BNA OSHC 2126, 2129-31, 1981 CCH OSHD ¶ 25,578, p. 31,899-900 (No. 78-6247, 1981), *vacated in part on other grounds*, 681 F.2d 69 (1st Cir. 1982). Here, Slavings retested the aft transom of Barge B-133 after ventilation had been applied therein and obtained an LEL reading of zero for Stoddard solvent vapors. Slavings then told one of Trinity's supervisors that the remaining tanks would have to be ventilated. Assuming that ventilation would have the same effect in the forward transom, Slavings left the shipyard.

Although we seriously question the wisdom of Slavings' decision to leave the shipyard before retesting the forward transom, we cannot find that his actions demonstrated a conscious disregard for the requirements of the Act or plain indifference to employee safety. The Secretary introduced no evidence that Slavings knew he was violating an OSHA standard by failing to retest the forward transom, and the fact that Slavings remained at the shipyard for 30-45 minutes so that he could retest the aft transom after it had been ventilated indicates that he was not indifferent to worker safety. Even though Slavings' actions were inconsistent with Trinity's safety policy, which requires retesting until an LEL reading of zero is obtained, disregard of a company's safety rule does not automatically establish willful disregard of an OSHA requirement.

George Campbell Painting Corp., 18 BNA OSHC 1929, 1934, 1999 CCH OSHD ¶ 31,935, p. 47,390 (No. 94-3121, 1999).

Under item 3b, Trinity failed to train employees on Tectyl's potential for eye and skin irritation. However, the Secretary introduced no evidence that Trinity knew that its training program failed to comply with OSHA standards or that Trinity would have failed to correct deficiencies in its program had it known of the duty to do so. In fact, Trinity's training program addressed most of the hazards associated with welding on preservative coatings. As noted above, each member of the welding crew in Barge B-133 had been trained on hot work in confined spaces on a number of occasions prior to March 8, 1995. Employees were trained to wear respirators and use a fire watch when welding, wear all-cotton clothing, and remove coatings six inches on each side of the point of welding. This is not a case where the employer lacked a meaningful safety program. *Cf. McKie Ford Inc. v. Secretary of Labor*, 191 F.3d 853, 857 (8th Cir. 1999) (affirming violation as willful where employer had no meaningful safety program).

Under item 6a, Trinity failed to take specific precautions to protect the Barge B-133 crew from fire hazards associated with welding. Again, however, there is no evidence that entry supervisor Rodney Quinn knew that welding without tarpaulins, drapes, or shields was in violation of OSHA standards. We also find no evidence that Quinn was indifferent to the safety of his welding crew. Quinn testified that crew members equipped themselves with blowers, respirators, and fire extinguishers before they entered Barge B-133 and that each welder was paired with a fire watch. Although Travis and Ivory started welding without a fan, Quinn stated that he "didn't want them welding without a blower[:];...[w]e got them to blower [sic] down on the aft transom also." Quinn's testimony regarding the precautions taken prior to the welding job was corroborated by both Anthony Quinn and Elmer Jones, members of the welding crew in Barge B-133.

The Secretary has pleaded that if not willful, these four items are properly characterized as serious. A violation is serious under section 17(k) of the Act, 29 U.S.C. § 666(k), "if there is a substantial probability that death or serious physical harm could result." This does not mean that an accident must be a substantially probable result of the violative condition but, rather, that a serious injury is the likely result should an accident occur. *Super Excavators, Inc.*, 15 BNA OSHC 1313, 1317, 1991-93 CCH OSHD ¶ 29,498, p. 39,804 (No. 89-2253, 1991). Even though the parties dispute the cause of the

March 8, 1995, accident, there is no question that the fire prevention violation is serious. See *ConAgra Flour Milling Co.*, 15 BNA OSHC 1817, 1824, 1991-93 CCH OSHD ¶ 29,808, p. 40,594 (No. 88-2572, 1992) (finding violations serious because, even though likelihood of fire or explosion resulting from violations not great, consequences of fire or explosion could very well be serious). We therefore affirm item 6a as serious.

We also find that the testing violations cited in items 2d and 2e are serious. The cited standards, 1915.12(c)(1)(ii) and 1915.14(a)(1)(i), require testing to determine the air concentration of toxics and marine chemist certification of spaces that contain or have contained combustible or flammable liquids or gases. The MSDS and product information sheet for Tectyl, introduced by the Secretary, establish that in sufficient concentrations Stoddard solvent vapors can cause serious injury. The MSDS specifically states that excessive inhalation of vapors can cause nasal and respiratory irritation and central nervous system effects, including unconsciousness and even death. The MSDS also warns that the product – even the residue – can ignite explosively during welding. In the present case, Slavings obtained an initial reading in the forward transom of 500 ppm for Stoddard solvent vapors some time between 4:20 and 5:00 p.m. – a reading that over an 8-hour period would be well above the listed shipyard PEL. In addition, Tectyl was still curing at the time the welding crew entered the transom (7:00 p.m.), and we cannot rule out the possibility that the production of Stoddard solvent vapors during the curing process could have created an explosive or toxic atmosphere. We find that, under these circumstances, Slavings’ failure to test the forward transom of Barge B-133 prior to worker entry could have led to worker exposure to conditions where death or serious physical harm could certainly have resulted.

On the other hand, we find that the training violation cited in item 3b is nonserious. According to Tectyl’s MSDS, “*prolonged or repeated skin contact* can cause irritation, defatting, dermatitis...[c]omponent is readily absorbed through the skin and may produce toxic effects.” (Emphasis added.) The MSDS also states that Tectyl can cause severe eye irritation, redness, tearing, and blurred vision. Regis Rumpf from Valvoline testified, however, that Stoddard solvent is “the most environmentally friendly and the most worker friendly” solvent that could have been used in Tectyl. Chester Sullivan, the Caruthersville Safety Manager, testified that a commercially available chemical information list posted in the shipyard’s conference room indicates that

Stoddard solvent presents little or no hazard from toxicity. Given that Trinity's employees do not appear to have had the "prolonged" or "repeated" exposure to Tectyl or Stoddard solvent vapors that could have triggered severe skin symptoms – welding on Tectyl-coated steel was, as the Secretary alleges in the Citation, a non-routine task – and the MSDS does not list permanent eye damage as a hazard of exposure, we find that item 3b is nonserious.

Penalties

Section 17(j) of the Act, 29 U.S.C. § 666(j), requires that in assessing penalties due consideration be given to four criteria: the size of the employer's business, the gravity of the violation, good faith, and the employer's history of violations. Generally, the gravity of the violation is the primary element in the penalty assessment. *See, e.g., A.P. O'Horo Co.*, 14 BNA OSHC 2004, 2013, 1991-93 CCH OSHD ¶ 29,223, p. 39,134 (No. 85-369, 1991). The gravity of a particular violation depends on: (1) the number of employees exposed; (2) the duration of the exposure; (3) whether any precautions were taken against injury; and (4) the probability that an accident would occur. *Caterpillar, Inc.*, 15 BNA OSHC 2153, 2178, 1991-93 CCH OSHD ¶ 29,962, p. 41,012 (No. 87-922, 1993).

The maximum penalty for a serious or nonserious violation is \$7000. Sections 17(b) and (c) of the Act, 29 U.S.C. §§ 666(b) and (c). After considering the statutory penalty factors, we assess a total penalty of \$11,000 for the three serious violations and a \$1500 penalty for the nonserious violation. Although Trinity had a comprehensive safety program in place at its Caruthersville shipyard, evidence of good faith, *see, e.g., Kohler Co.*, 16 BNA OSHC 1769, 1777, 1993-95 CCH OSHD ¶ 30,457, p. 42,065 (No. 88-237, 1994), Trinity is also a large corporation with a history of OSHA violations. We find that the gravity of the serious fire prevention violation cited in item 6a is high, given that the eight members of the Barge B-133 crew were exposed to the violative conditions for several hours on March 8, 1995. *See Kus-Tum Builders*, 10 BNA OSHC 1128, 1132, 1981 CCH OSHD ¶ 25,738, p. 32,107 (No. 76-2644, 1981) (gravity "relatively high" where at least six employees worked under inadequately braced trusses for several hours). Under these conditions, the probability of an accident was fairly high, and the evidence indicates that Travis and Ivory had extinguished two fires in the aft transom on March 8, 1995, before the fatal accident occurred. We therefore assess a penalty of \$5000 for item 6a.

We also find that the gravity of the atmospheric testing violations cited in items 2d and 2e is fairly high given the number of employees exposed to the violative conditions, and we assess penalties of \$4000 and \$2000 respectively for those violations. The gravity of the violation cited in item 2d is higher than that cited in item 2e because the duration of employees' exposure to the violative conditions was longer – section 1915.12(c)(1)(ii), cited in item 2d, requires testing prior to *entry* into confined or enclosed spaces, whereas section 1915.14(a)(1)(i), cited in item 2e, requires marine chemist certification prior to the commencement of welding in such spaces. Here, the workers in the forward transom of Barge B-133 did not begin welding until approximately thirty minutes after entry.

For the nonserious training violation cited in item 3b, we assess a penalty of \$1500. The gravity of this item is low because Trinity's employees were trained to wear protective clothing, including respirators, when welding, and the work they were performing did not involve a high probability of skin contact with liquid Tectyl.

Order

Items 2d, 2e and 6a of Citation 2 are affirmed as serious violations, and item 3b of Citation 2 is affirmed as a nonserious violation. A total penalty of \$12,500 is assessed. The other items on review are vacated.

/s/
W. Scott Railton
Chairman

/s/
Thomasina V. Rogers
Commissioner

/s/
James M. Stephens
Commissioner

Dated: April 26, 2003

:

SECRETARY OF LABOR,
 Complainant,
 v.
 TRINITY INDUSTRIES, INC.,
 Respondent.

OSHRC Docket No. 95-1597

APPEARANCES

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 For Respondent

Before: Administrative Law Judge Ken S. Welsh

DECISION AND ORDER

Trinity Industries, Inc., (Trinity) builds dry hopper barges in Caruthersville, Missouri. On March 8, 1995, two employees caught on fire and died while welding gusset plates inside the aft transom of a newly constructed barge. After an inspection by the Occupational Safety and Health Administration (OSHA), Trinity received two citations alleging violations of the shipyard employment standards at Part 1915.

Citation No. 1, consisting of seven items, alleges serious violations of the competent person standard at § 1915.7, the fire extinguisher standard at § 1915.52(b)(2), and the temporary lighting standard at § 1915.92(b)(2). Citation No. 1 proposes penalties totaling \$23,500.

Citation No. 2, consisting of twenty-two items, alleges willful violations of the accident reporting standard at § 1904.8; the confined and enclosed space standard at § 1915.12; the hot work standard at § 1915.14(a)(1)(i); the maintenance of safe conditions standard at § 1915.15; the ventilation in welding standard at § 1915.51; the fire prevention standard at § 1915.52; the

welding in way of preservative coatings standard at § 1915.53; the work in confined or isolated spaces standard at § 1915.94; and the employee training standard at § 1915.1200. Citation No. 2 proposes penalties totaling \$425,000.

The hearing was held in Memphis, Tennessee. Jurisdiction and coverage are stipulated (Tr. 5). The violations of the competent person, temporary lighting, reporting, enclosed space, employee training, and welding standards are, for the most part, affirmed.

Background

Trinity operates a shipyard on the Mississippi River near Caruthersville, Missouri. It was purchased in 1993 and Trinity began building new barges in mid-1994. The Caruthersville shipyard, part of Trinity's marine division, builds new dry cargo hopper barges. It does no repair work (Tr. 1156, 1442-1443, 1572-1573, 1957).

A dry hopper barge is an open-top hopper for carrying cargo. The hopper is surrounded by a series of tanks. The tanks along each side of the hopper are referred to as "wing tanks." The tanks on either end are referred to as the "aft transom" and the "forward transom." The wing tanks and transoms protect the cargo-carrying hopper by preventing the hopper from being punctured and by providing ballast to keep the barge from tipping over (Exhs. R-12, R-20, R-21; Tr. 1170-1171, 1573-1574).

The barges are constructed from structural steel. The sections of the barge are constructed separately and then welded together in the main erection building (Tr. 12, 121-122). After the barge is constructed, it is moved into the paint building where the barge is painted. The inside of the transoms and tanks are sprayed²⁵ with a rust inhibitor (Tr. 13, 66-68). At the time of the accident, Trinity used Tectyl 400C-WD, manufactured by Valvoline (Exh. C-47; Tr. 1162, 1992). A thin coat (a thousandth of an inch thick) of Tectyl is sprayed inside the transoms and tanks (Tr. 182, 585).

Tectyl consists of a rust inhibitor and a carrier; Stoddard solvent.²⁶ The Stoddard solvent (approximately 55 per cent of Tectyl) carries the inhibitor package to the metal surface and then evaporates, leaving behind the rust inhibitor. This is referred to as "curing." Valvoline recommends a 24-hour curing time.²⁷ According to its material safety data sheet (MSDS), Tectyl presents a potential fire and explosive hazard, particularly during the curing process (Exh. C-47). The flash point of Tectyl is 106 degrees Fahrenheit (Exhs. C-47, C-60; Tr. 582-583, 595, 611).

²⁵Also referred to as "oiling" (Tr. 71).

²⁶Mineral spirits generically classified as aliphatic hydrocarbon.

²⁷The 24-hour "cure time" is based on 50% relative humidity and 77 degrees Fahrenheit (Tr. 587).

In the product information sheet users are cautioned in bold print that “PARTIALLY CURED FILM SHOULD NOT BE EXPOSED TO IGNITION SOURCES SUCH AS FLARES, FLAMES, SPARKS, EXCESSIVE HEAT, OR TORCHES.” Also, Tectyl presents various health hazards to the eyes, breathing, swallowing, and skin if there is an acute overexposure (Exh. C-47).

After the barge is painted, steel plates previously cut out of the bulkheads between the tanks for ventilation purposes are welded back into place so each tank is watertight. This is referred to as welding in “hot plates” (Tr. 95, 161, 1208, 1994). The barge is launched and inspected for leaks (Tr. 198). It is then ready for delivery to the customer (Tr. 1568-1569).

In early 1995 Trinity began building a series of dry hopper barges under a contract with Cargo Carriers (Tr. 1970). On March 8, 1995, the first barge, Barge #1,²⁸ was constructed and the painters in the paint building were in the process of spraying Tectyl inside the transoms and tanks when the engineers notified the production manager of a design problem (Exh. C-50, p.1²⁹). The structural supports inside the transoms were not properly aligned (Tr. 32, 1482). To correct the problem, it was decided to weld 12 gusset plates (12 x 12 inches, triangular-shaped steel plates) in each transom. Also, other welding work was needed inside the number 1 and number 5 wing tanks (Tr.61, 247, 518, 1482, 2019-2020). This was the first time a welding crew in the paint building welded gusset plates inside transoms recently sprayed with Tectyl (Tr. 1804).

The painters started spraying Tectyl inside the transoms and tanks at 3:00 p.m. The spraying was completed around 5:30 p.m. (Tr. 74, 80-81, 1796-1797). Trinity’s designated competent person, Michael Slavings, checked the atmosphere inside the transoms and tanks and posted the Hot Work³⁰ Permit at the ladder to Barge #1 at 5:30 p.m. (Exhs. C-52, C-56; Tr. 1970, 1983, 2042). Slavings then went home.

The welding crew, consisting of eight welders, started setting up around 6:30 p.m. (Tr. 17, 20-21). At 7:00 p.m., the welding crew entered the forward transom and began welding gusset plates (Tr. 128-129). Inside, the transom was 12 feet high, 35 feet long, and 5 feet wide (Tr. 2238). Entrance into the transom was through a 24 x 16 inch opening on the deck of the barge (Tr. 1367, 1530). From 7:30 to 8:00 p.m. the welding crew took a supper break (Tr. 23, 127-128, 135, 141). After the break, the main part of the crew returned to the forward transom.

²⁸Also referred to as Barge B-133.

²⁹Statement of Rick Burrow, production manager, accepted under Federal Rules of Evidence, Rule 801(d)(2).

³⁰“Hot work” means any activity involving welding. *See* § 1915.11(b).

Two welders, Wayne Ivory and John Travis, began welding gusset plates inside the aft transom (Tr. 24, 141, 1500).

Shortly before the 10 p.m. break, the crew inside the forward transom completed their welding. A crew member went to the aft transom and told Ivory and Travis that it was break-time (Tr. 27). For no known reason, Ivory and Travis did not go with the crew on break. By the time the crew returned to the barge, Travis and Ivory were on fire and dying (Tr. 28, 257-258, 263-264). Travis died on the deck just outside the opening to the aft transom and Ivory died on the deck near the forward transom (Tr. 29-30). The accident occurred at approximately 10:15 p.m. (Tr. 28, 257, 1495). At the time of the accident, Travis and Ivory had welded in nine of the twelve gusset plates and had partially welded one other plate in the aft transom (Tr. 859, 1504-1505, 1541-1542).

Trinity reported the accident to OSHA at noon on March 9, 1995. OSHA Industrial Hygienist (IH) Mae Ping Grogg initiated the inspection on March 10, 1995 (Tr. 288, 292).

Discussion

There is no dispute that the Part 1915 “shipyard employment” standards are applicable to Trinity’s Caruthersville facility. Part 1915 applies to “all ship repairing, shipbuilding, and shipbreaking employments and related employments.” *See* § 1915.2. “Shipbuilding” involves the construction of a vessel. *Also see* § 1915.4(k). Trinity’s Caruthersville facility builds new dry hopper barges (Tr. 1145, 1957).

ALLEGED VIOLATIONS

SERIOUS CITATION NO. 1

Items 1a - 1d - Competent Person Skill and Knowledge

Section 1915.7 requires the designation of one or more “competent persons” for the purpose of inspecting and testing hazardous or unsafe work conditions in shipyard employment.

A “competent person” is defined at §1915.4(o) as a:

person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees as required by the particular regulation under the conditions which it applies.

The competent person standard is a performance standard which does not set detailed, mandatory training requirements for competent persons. Each shipyard is given flexibility to

determine what skills and knowledge the competent person needs based on the specific conditions at the shipyard. *See* OSHA Instruction STD 2-4.1 (June 23, 1995).

Trinity designated Michael Slavings and Roy Cossey³¹ as competent persons at its Caruthersville shipyard (Tr. 1238-1239, 2058). After a 12-hour competent person training course by Malcolm Fontenette, Trinity's division safety manager, Slavings was certified as a competent person in December, 1993 (Exh. R-26; Tr. 1173, 1963). When checking an enclosed space for oxygen level, the lower explosion limit (LEL³²), and toxicity, Michael Slavings was trained to use a meter (Tr. 1154, 1157).

On March 8, 1995, Trinity used the MSA Model 361 "Hydrogen Sulfide, Combustible Gas and Oxygen Alarm" testing meter to test the atmosphere inside the transoms and tanks (Exh. C-46). The meter, a hand-carried battery-operated instrument, samples atmospheres for oxygen content, flammable or combustible gases and vapors, and toxicity. It houses three separate sensors which operate simultaneously. The meter gives a readout in percentages which are appropriate for oxygen level and LEL. For toxicity, it is necessary to extrapolate the percentage reading into parts per million (ppm) to determine the permissible exposure limit (PEL) (Tr. 1621, also see § 1915.12). The operations manual for the MSA 361 requires that before each day's use (every 8 hours) the meter must be calibrated (Exh. C-46; Tr. 410). The calibration gas for the meter is hydrogen sulfide and pentane (Exh. C-46; Tr. 2137). The manual states that:

Even though the instrument responds to any combustible gas or mixture below the flammable range, it provides accurate measurement only of the specific gas for which it has been calibrated.

In testing the atmosphere in an enclosed space, Trinity trained its competent persons to obtain readings of 20.8 percent for oxygen, zero for LEL, and zero for toxicity before authorizing work (Tr. 1157). These levels are below the levels permitted by OSHA. *See* § 1915.12. Trinity's competent person training is limited to new construction. The Caruthersville shipyard constructs only new dry hopper barges and Trinity decides on the paints and preservative coatings applied inside the barges. .

Item 1a - Calibration of Testing Equipment

³¹Roy Cossey was not involved in certifying enclosed spaces or calibrating the meter prior to the March 8, 1995, accident (Tr. 1239, 2056).

³²The LEL is the concentration of a flammable or combustible gas or vapors in the air that will propagate a flame (Tr. 397, 399).

The citation alleges that Trinity did not ensure that Michael Slavings, the designated competent person, was aware (1) of the frequency for calibrating the MSA Model 361 meter; (2) whether low oxygen readings would interfere with the ability of the meter to accurately read combustible gas; (3) whether the meter was capable of determining if Stoddard solvent was present; and (4) whether there was any limitations with regard to the use of the meter.

Section 1915.7(c)(4) requires an employer to ensure that each designated competent person has the following skill and knowledge:

[a]bility to calibrate and use testing equipment including but not limited to, oxygen indicators, combustible gas indicators, carbon monoxide indicators, and carbon dioxide indicators, and to interpret accurately the test results of that equipment.

The Secretary argues that Michael Slavings' lack of skill and knowledge to calibrate and to interpret the results of the MSA 361 meter is shown in two previous statements to OSHA taken during the inspection. IH Mae Ping Grogg testified that when interviewed, Michael Slavings did not know when to calibrate the MSA 361 meter; that the meter must be calibrated with pentane gas; that the meter must be calibrated before each use; and how to interpret the readings on the meter (Tr. 379-387, 531-532, 535).

In his March 15, 1995, written statement (seven days after the accident), Michael Slavings stated in reference to calibration (Exh. C-45):

Mike: I've got an MSA 361 meter.

Mae: Can you tell me a little bit about how you go about calibrating and checking to make sure it works?

Mike: This particular model if you turn it on, it will flash through all of its modes, reset it, it has three zero knobs, one for the oxygen, one for toxicity, and one for LEL. And you set the oxygen on 20.8, set your LEL on 000, and your toxicity on 000 with just the regular air. And if you want to do another check to make sure it's working, you blow in the end of it, set the alarm off and then you can reset it again. That's normally what I do before I go down in and check the tanks.

Mae: Do you have to use any calibration gas on the instrument?

Mike: Yes, once a month its calibrated with the gas.

Mae: What kind of gas is it?

Mike: There's two different ones. One of them is hydrogen sulfide, and one of them is carbon monoxide.

Mae: And you'll do that once a month?

Mike: Uh-huh.

In his May 18, 1995, written interview statement (Exh. C-44, p. 2), Slavings stated:

Still using the Model 361 meter. Calibrate with H₂S, CO and oxygen with Air. I don't know gas for LEL. Once a month

calibrate with gas. I was told to calibrate once a month with gas. Each time before do checks, will zero the instrument. The meter will register O2 and LEL. I don't know if the meter will check for hydrocarbons, and I don't know regarding Stoddard solvent. I know it will check on explosion level. 10% is the standard where have to stop.

Trinity acknowledges that MSA manual for the 361 meter requires calibration before each use (Tr. 425, *also see* Exh. C-46). Also, there is no dispute that the calibration gas for the meter is hydrogen sulfide and pentane (Tr. 2137).

Michael Slavings testified that in his previous statements to OSHA, he could not remember which gas was used for calibration because there are three or four different bottles of calibrating gas (Tr. 2016). Also, he was confused when he told OSHA that he calibrated the meter once a month. He thought OSHA was referring to the recorded calibration made once a month and not the checks he does before each use (Tr. 1973-1974). Slavings testified that he did calibrate the 361 meter with pentane gas prior to testing inside the transoms and wing tanks on March 8, 1995 (Tr. 1971).

Michael Slavings received competent person training in December, 1993, and no refresher training until after the accident (Tr. 2055). His statements to OSHA were signed and taken in the presence of Trinity's corporate safety manager and attorney (Tr. 2033). The previous statements are consistent and demonstrate a lack of knowledge in calibrating the MSA 361 meter despite being conducted two months apart and in the presence of Trinity's attorney and corporate safety manager. Slavings does not mention pentane as a calibrating gas or that he calibrates before each use. Also, he concedes that he did not know if the meter checked for hydrocarbons or Stoddard solvent, which is the principal ingredient in Tectyl and the one which potentially creates an unsafe atmosphere. If he was unable to remember or confused, Slavings could have corrected any misunderstanding during the interview or the intervening two months. Although Slavings testified that he knew to calibrate with pentane gas, his testimony at hearing was after two refresher competent person training courses on May 18, 1995, and August 15, 1996 (Tr. 2063). His prior statements to OSHA are more indicative of his skill and knowledge regarding calibrating the MSA meter at the time of the accident. A violation of § 1915.7(c)(4) is affirmed.

Item 1b - Inspection and Testing

The citation alleges that Trinity's designated competent person could not perform an adequate assessment of the spaces on Barge #1 because of his lack of knowledge regarding the properties of Tectyl 400C-WD. Tectyl contains "aliphatic hydrocarbons (Stoddard type)" (Exh. C-47; Tr. 535-536). Section 1915.7(c)(5) requires an employer to ensure that each designated competent person has the

[a]bility to perform all required tests and inspections which are or may be performed by a competent person as set forth in Subparts B, C, D and H of this part.

Subparts B, C, D, and H involve confined and enclosed spaces, surface preparation, welding, and equipment. There is no dispute that Slavings received competent person training and was certified as a competent person in December, 1993 (Exh. R-26, Tr. 2055). His competent person training included the testing and inspection of confined and enclosed spaces. His competent person training was provided by Malcolm Fontenette, Trinity's division safety manager, and took twelve hours (Tr. 1963). The training included checking the enclosed space with a meter and if the meter recorded 20.8 oxygen and zero for LEL and zero for toxicity, a hot work permit could be issued if ventilation was maintained (Tr. 1966-1967).

The standard cited requires the competent person to have the skill and knowledge to test and inspect the atmosphere inside the transoms and tanks for potential hazards. It does not require a competent person to memorize the properties of all preservative coatings used at the shipyard. A visual inspection is defined as the physical survey of the space, its surroundings and contents to identify hazards. *See* § 1915.11(b).

There is no dispute that Tectyl was applied inside the transoms and tanks prior to Slavings' testing on March 8, 1995. Michael Slavings at the time of his testing did not know if the MSA 361 meter checked for hydrocarbons or Stoddard solvents. He was unaware of the characteristics and potential hazards presented by Tectyl (Exh. C-4; Tr. 882, 2070, 2075-2077). He knew the meter checked for the oxygen level, explosion hazard and toxicity level. He had read the MSDS for Tectyl prior to March 8, but was not familiar with Tectyl's properties when he conducted the tests inside the transoms and tanks (Exh. C-44).

The standard cited requires the competent person to have the skill and knowledge to perform testing and inspections. The Secretary does not dispute that the MSA 361 was an appropriate meter for testing the atmospheres inside the transoms and tanks. It is uncontradicted that Michael Slavings used the meter to test on March 8, 1995. Also, it is undisputed that Slavings walked inside the transoms and tanks before issuing the hot work permit (Tr. 1972).

The Secretary failed to show that Slavings lacked the skill and knowledge to test and inspect as required by the standard cited. A violation of § 1915.7(c)(5) is vacated.

Item 1c - Evaluation of Inspection and Test

The citation alleges that the designated competent person who tested the atmosphere in the forward and aft transoms lacked sufficient knowledge to determine if a Marine Chemist or Certified Industrial Hygienist was needed to properly evaluate the spaces. Section 1915.7(c)(6) requires an employer to ensure that each designated competent person has the

[a]bility to inspect, test, and evaluate spaces to determine the need for further testing by a Marine Chemist or a Certified Industrial Hygienist.

Section 1915.7(c)(6) contemplates that circumstances may require further testing by a Marine Chemist. There may be atmospheric conditions in the shipyard that cannot be evaluated effectively by a person trained only to the competent person level. The competent person must have the ability to evaluate spaces after a test to determine the need for further testing by a Marine Chemist.

There is no dispute that a Marine Chemist did not test the transoms and tanks of Barge #1 until after the accident. Michael Slavings, designated competent person, acknowledges that his March 8 testing of Barge #1 recorded, for the first time, readings other than 20.8 percent for oxygen and zeros for LEL and toxicity (Tr. 1981). He recorded LEL levels of .05 percent (500 ppm)³³ in the forward transom, .03 percent (300 ppm) in the #1 wing tanks, .04 percent (400 ppm) in the #2 wing tanks, and .04 percent (400 ppm) in the aft transom (Exh. C-57; Tr. 1976, 2023). Curtis Chambers, corporate safety manager, and Slavings agreed that the readings also indicated a potential toxicity problem (Tr. 1706, 2029). Slavings testified that he took a subsequent reading only in the aft transom after fan ventilation had been applied to ensure the level was reduced to zero (Tr. 1983). In his two written statements to OSHA, in addition to not knowing the properties of Tectyl and whether the meter was able to detect Stoddard solvent, there was no mention of any retesting (Exhs. C-44, C-45). Also, although fan ventilation was used, there is no showing that Slavings knew or instructed the use of ventilation in the forward transom and tanks. It is not shown on the hot work permit nor did he verbally instruct the welding crew (Exh. C-52; Tr. 2023, 2026).

³³Percent is extrapolated to ppm; 1% equals 10,000 ppm (Tr. 1681).

Trinity argues that Slavings was trained to ventilate the enclosed space until he obtained the proper readings; 20.8 percent for oxygen, zero for LEL and zero for toxicity. “If Slavings could not obtain the correct readings by means of ventilation he was instructed to call a marine chemist because that meant there was a more serious problem” (Trinity Brief, p. 46; *also see* Tr. 1158-1160, 1958-1959).

Michael Slavings went home at 5:30 p.m., without the MSA 361 meter reading zero in the forward transom or wing tanks. He also left before fan ventilation was applied or the welders commenced their work inside the transoms and tanks (Exh. C-56; Tr. 2021). He stated “I didn’t recheck that tank, no” even though the toxicity level for aliphatic hydrocarbons (Stoddard type) in the forward transom may have been above the PEL (Tr. 2027). The PEL for Slavings’ enclosed space is 200 ppm 8-hour time-weighted average (TWA) See § 1915.100, Table Z not (Tr. 2031). Malcolm Fontenette, division safety manager and competent person trainer, testified that a competent person needs to test each space. The competent person can not rely on his prior experience or the results of previous readings to determine the conditions in an enclosed space (Tr. 1247, 1414).

Trinity’s written ventilation program contemplates more than one test (Exh. C-68; Tr. 1276, 1301). Also, Trinity’s confined space program requires the competent person to test the air before entry, monitor continuously or retest periodically for as long as the space is occupied (Exh. C-55, p. 1746). Malcolm Fontenette concedes that Slavings did not comply with Trinity’s program (Tr. 1304). An employee misconduct defense was not asserted. There was no review or supervision of Slavings’ competent duties (Tr. 1294, 1905, 1908-1909, 1913, 1915). When asked to whom Michael Slavings reported, Malcolm Fontenette stated “I guess it would have been me.” (Tr. 1174). Fontenette’s office was eight hours from the Caruthersville shipyard. He visited it only twice in fifteen months (Tr. 1237, 1267). Fontenette also did not review the hot work permits issued by Slavings (Tr. 1263).

Michael Slavings, as competent person, should have ensured that the contaminants in the space were within the permissible limits before certifying the space for work. His testing showed LEL and possible toxicity levels not encountered by him prior to March. Slavings took no action including contacting a Marine Chemist before certifying the spaces for hot work. In addition to his readings, he admittedly was unaware of the properties of Tectyl, its 24-hour curing time, and its potential health hazards (Tr. 2069-2070, 2075-2077, 2079). A competent person can not properly evaluate spaces for hazards for which he is neither looking nor familiar. The standard contemplates that the competent person has sufficient knowledge and skill to

identify potential hazards. The record shows that Slavings lacked the skill and knowledge when he certified the space for hot work. He was unable to properly evaluate the spaces based on his limited knowledge to determine the need for further testing by a Marine Chemist. Jimmy Hollis, leadman, did not respect Slavings knowledge as a competent person. Hollis agreed that if Michael Slavings issued a hot work permit, he would consider the enclosed space unsafe; “I would have got a toothache or a headache or something and went home” (Tr. 220-221). A Marine Chemist was utilized after the accident (Tr. 1819). A violation of § 1915.7(c)(6) is affirmed.

Item 1d - Maintain Information on Tests

The citation alleges that Trinity’s designated competent person did not maintain records on calibration, the specific spaces tested, and the test results for each space. Section 1915.7(c)(7) requires an employer to ensure that the designated competent person has the “ability to maintain records required by this section.”

The record keeping requirements at §1915.7(d) require that whenever tests and inspections are done by a competent person, he is to record “the location, time, date of inspected spaces, and the operations performed, as well as the test results and any instructions.” The standard also requires the records be kept for at least three months from the completion date of the job. *See* §1915.7(d)(2).

Michael Slavings recorded his tests in a notebook (Exh. C-57) and his computer (Exh. C-61). His test results were not recorded on the hot work permits (Exhs. C-52, C-76). While performing the tests Slavings used a notebook to initially record his test results. Later, he entered the results in a computer (Tr. 1977). Slavings “grouped” the test results if they were the same. If all the test results were the same, he recorded the reading once and not separately for each space. If the readings were not the same, Slavings recorded those readings separately (Tr. 1172, 1219).

Section 1915.7(d)(1) does not prohibit “grouping” of identical readings. It requires, however, the identity of each location tested. The records kept by Michael Slavings failed to identify each location tested. The notebook was destroyed after the results were entered into the computer. The computer only shows one test result for the barge, not the spaces tested (Exh. C-

61). The hot work permit also did not identify at what time the testing was performed, the spaces tested or the results of the tests.

Malcolm Fontenette, division safety manager, concedes that Slavings' recordkeeping was inadequate (Tr. 1225-1226, 1228, 1405, 1428). The recordkeeping requirements are in part for employees who need to perform work in the space. Fontenette acknowledges that the standard requires employee access to testing results (Tr. 1226, 1228). Employees provided the records could not determine test results for each space.

The failure of Slavings to maintain proper test records indicates his lack of skill and knowledge as contemplated by the standard. The records maintained by Slavings were not reviewed by Trinity (Tr. 1233). A violation of § 1915.7(c)(7) is affirmed.

Classification of Item 1 Violations

The Secretary alleges the competent person violations in Item 1 as serious. In determining whether the violations are serious, the Secretary must show that Trinity knew or should have known, with the exercise of reasonable diligence, of the presence of the violations, and there was a substantial probability that death or serious physical harm could result from the condition.

Trinity does not argue the classification of Item 1. The standard involves the skill and knowledge provided to the competent person to ensure his ability to calibrate the testing equipment, evaluate test results and maintain proper records. The lack of such ability may cause serious injury or death to employees working in unsafe conditions. The record establishes that the violations of §§ 1915.7(c)(4), 1915.7(c)(6), and 1915.7(c)(7) were serious.

Item 2 - Inspection and Test Records

The citation alleges that Trinity did not maintain adequate inspection and test results. The test results "did not include the specific compartments tested nor the test results of the spaces, because the results were averaged and recorded for the entire barge, not for the individual spaces tested." Section 1915.7(d)(1) requires:

When tests and inspections are performed by a competent person, Marine Chemist, or Certified Industrial Hygienist as required by any provisions of Subparts B, C, D, or H of this part, the employer shall ensure that the person performing the test and inspection

records the location, time, date, location of inspected spaces, and the operations performed, as well as the test results and any instructions.

When the marine standards were revised in 1994, OSHA eliminated the mandated use of the OSHA 74 Form (Exh. C-59). Employers were allowed to record the information in any format as long as the required information was maintained.

Trinity acknowledges that the records maintained by Michael Slavings, its designated competent person, “were not maintained in sufficient detail and in a format so that someone other than Slavings could be sure of the information” (Trinity Brief, p. 49). Trinity concedes Slavings’ recordkeeping was deficient. Trinity states that for the most part Slavings could tell from his records where the tests were taken, what tanks were tested, the date of the tests, the test results, the operations performed and the instructions to the employees. Trinity seeks to have the violation reclassified as “other” than serious with no penalty. Trinity argues that “because while there was substantial compliance, the records of Slavings’ test could have been maintained in a better manner” (Trinity Brief, p. 107).

It is undisputed that the records maintained by Slavings did not contain all the required information (Exhs. C-52, C-57, C-61, C-76; Tr. 2132). His hot work permits did not identify the places tested and the test results (Tr. 1405, 1428). Trinity acknowledges that the hot work permit and computer entry did not comply with the recordkeeping requirements of § 1915.7(d)(1) (Tr. 1734). The notebook entry was thrown away. Also, Michael Slavings did not record the alleged retest of the aft transom on March 8 (Tr. 1690-1691).

Trinity’s responsibility is to ensure that complete records were maintained. Malcolm Fontenette, division safety manager, was Slavings competent person supervisor. Fontenette, whose office is in New Orleans, acknowledges that he did not review the hot work permits issued by Slavings and only visited the shipyard twice in eighteen months. It was his decision not to review the competent person records (Tr. 1406). Trinity provided a 12-hour competent person training course without any assurance that the competent person understood the recordkeeping requirements. Trinity’s inadequate supervision of the competent person could result in employee injury such as occurred on March 8, 1995. A serious violation of § 1915.7(d)(1) is affirmed.

Item 3 - Fire Extinguisher Equipment

The citation alleges that the fire extinguisher in the forward transom could not be actuated by employees attempting to help extinguish an employee on fire. Also, the fire extinguisher used in the aft transom had been discharged and needed to be replaced. Section 1915.52(b)(2) requires in part:

Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

There is no dispute that the fire extinguishers used in the transoms were suitable (Secretary Brief, pp. 34-36). IH Grogg identified the fire extinguisher as “CO-2 dry chemical fire extinguisher” (Exhs. C-17, C-18; Tr. 325, 854). The MSDS for Tectyl specifies “EXTINGUISHING MEDIA: REGULAR FOAM OR CARBON DIOXIDE OR DRY CHEMICAL” (Exh. C-47, Tr. 1642-1643). The issue is whether the fire extinguishers in the forward and aft transoms were “in a state of readiness for instant use.”

Employees allegedly stated to OSHA during the inspection that they could not actuate the fire extinguisher used in the forward transom (Tr. 633, 851). IH Grogg speculated that it was not operational because of paint overspray (Exh. C-17; Tr. 329, 851). However, the pin was still in the extinguisher and IH Grogg did not physically test the extinguisher (Tr. 851). Also, the employees who complained to OSHA were not identified. Such statements are not credited. *See* Rule 801(d)(2)(D), Federal Rules of Evidence. Further, the employees who testified did not indicate any problem with the fire extinguisher in the forward transom. To the contrary, Elmer Jones, welder, testified that in the forward transom, no one had to discharge the fire extinguisher (Tr. 151). Curtis Chambers, corporate safety, testified that he personally pulled the pin and tested the extinguisher without any problem (Tr. 1590-1592). The record, therefore, does not support a finding that the fire extinguisher used in forward transom was not ready for instant use.

With regard to the fire extinguisher in the aft transom where the accident occurred, there is no dispute that Travis and Ivory used the extinguisher twice while welding prior to the accident (Exh. C-31; Tr. 1593, 1756-1757, 1771; Trinity Brief, p. 53). The Secretary asserts that after the fire extinguisher is used, it should be replaced before continuing the welding work. The employees did not know whether there was sufficient chemical remaining to put out other fires. IH Grogg states that a fire extinguisher needs to be replaced after each use (Tr. 855-856, 857, 1054-1056).

The Secretary's interpretation is entitled to deference if reasonable, even if asserted for the first time. However, it is unclear that this is the Secretary's interpretation. IH Grogg testified that "this was my interpretation with regard to fire extinguishers" (Tr. 856). She did not cite an official written interpretation of the Secretary nor that she had the authority to render an official interpretation. Also, the standard requires only that the fire extinguisher be ready for instant use. Such readiness contemplates an ability to extinguish all reasonably anticipated fires.

The fire extinguishers used by Trinity have a gauge that indicates the amount of chemical remaining in the extinguisher (Tr. 803-804, 1055, 1861). The gauge on the extinguisher used in the aft transom showed that there was 10 ½ pounds of chemical (over half of a full extinguisher) remaining at the time of the accident (Tr. 1594). Travis and Ivory were nearly finished with their welding in the aft transom (Tr. 859). They had used the extinguisher twice before the accident to put out welding fires. With over half of its chemical remaining, the Secretary failed to show that the fire extinguisher was not capable of extinguishing any reasonably anticipated fires. The alleged violation of § 1915.52(b)(2) is vacated.

Item 4 - Temporary Lights

The citation alleges that the temporary string of lights used inside the aft transom was not maintained in a safe condition. The cord was spliced where connections were made to the lights. Section 1915.92(b)(2) requires:

Temporary lights shall be equipped with heavy duty electric cords with connections and insulation maintained in safe condition.
Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.
Splices which have insulation equal to that of the cable are permitted.

IH Grogg stated that the cord connecting the temporary lights in the aft transom contained splices and had exposed current-carrying parts where the cord was wired into the lights (Tr. 959). The cord was heavy-duty (Tr. 957-958). The Secretary argues that the photographs of the lights show the splices and that the tape used for the splice was not of a similar thickness as the insulating cord (Secretary Brief, p. 37; Exhs. C-13, C-19, C-20, C-22, C-28, C-30). The issue is whether the connections and insulation on the lights were maintained in a safe condition.

Prior to IH Grogg's arrival on-site, Curtis Chambers, corporate manager, removed the lights from the aft transom (Tr. 1472-1473, 1605). Chambers testified that from his inspection

of the lights, there were no exposed, live-current-carrying parts and the insulation was in a safe condition (Tr. 1601-1603). He testified that the individual current-carrying copper wires were separately insulated (Tr. 1602-1603). Trinity argues, “the areas circled by IH Grogg simply show where the individually insulated wires have been extended from the outside cable in order to attach to light fixtures” (Trinity Brief, pp. 57-58).

The standard requires that connections and insulation be maintained in a safe condition. By removing the outer sheathing of insulation and leaving the individually insulated wires, the cord’s safety was compromised from the manufacturer’s specifications. One layer of insulation was no longer provided. The remaining insulation was not equal to the cord. The requirements of the standard were not met.

Because one layer of insulation remained and there was no showing of an exposed current-carrying wire, the violation is “other” than serious. Grogg did not test the cords. The violation of § 1915.92(b)(2) is affirmed as “other” than serious.

WILLFUL CITATION NO. 2

Item 1 - Accident Reporting

The citation alleges that Trinity failed to report to OSHA the double fatality which occurred at approximately 10:15 p.m. on March 8, 1995, until more than twelve hours later at approximately 12:00 noon on March 9, 1995. Section 1904.8(a) requires:

Within 8 hours after the death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident, the employer of any employees so affected shall orally report the fatality/multiple hospitalization by telephone or in person to the Area Office of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, that is nearest to the site of the incident, or by using the OSHA toll-free central telephone number.³⁴

There is no dispute that the accident occurred at 10:15 p.m. on March 8, 1995. The Caruthersville manager, production manager, and safety manager were immediately notified and returned to the shipyard (Exhs. C-50, C-51, C-67). The safety manager secured the accident scene and placed a guard on duty (Exh. C-51; Tr. 1864-1865). At approximately 11:20 p.m., the safety manager notified Malcolm Fontenette, Trinity’s division safety manager, in New Orleans of the accident. Fontenette then notified Curtis Chambers, Trinity’s corporate manager, of the

³⁴The exception that if the employer does not learn of a reportable incident at the time it occurs does not apply. Trinity was immediately aware of the accident.

accident at his home in Arlington, Texas, at approximately 1:30 a.m., March 9 (Tr. 1466). Chambers was told that two employees had died from an explosion and fire. Chambers telephoned the Caruthersville shipyard for more details without success (Tr. 1467).

Therefore, Chambers decided that there was not enough information to telephone OSHA. Also, OSHA's area office was closed until the next morning. Chambers then made airplane reservations, telephoned Trinity's attorney, and went to his Dallas office to collect equipment for his investigation of the accident. He caught an early morning airplane flight to Memphis. At Memphis, he rented a car and drove more than a 100 miles to the Caruthersville shipyard. He arrived at approximately 11 a.m. on March 9. At noon, he telephoned OSHA's St. Louis Area Office to report the accident (Tr. 1467-1468, 1802). IH Grogg arrived at the Caruthersville shipyard during the afternoon of March 10 (Tr. 292, 1467).

Trinity agrees "there was a technical violation because the report was not made in 8 hours" (Trinity Brief, p. 107). Trinity does not dispute that OSHA could have been notified earlier. Trinity argues, however, that Chambers lacked sufficient information about the accident and the short delay did not affect OSHA's inspection. The barge were secured until OSHA initiated its inspection. Also, Chambers gave OSHA copies of photographs of the scene (Tr. 1468-1475). Trinity seeks to reclassify the violation as *de minimis*.(Trinity Brief, p. 61).

Curtis Chambers knew of the 8-hour reporting requirement (Tr. 1467). He knew OSHA's 1-800 telephone number (Tr. 1799). Although he made several telephone calls at 1:00 a.m., including to Trinity's attorney, he consciously chose not to notify OSHA. The standard is clear. An employer must report a fatality within eight hours. Trinity chose not to comply. It is not for Trinity or Chambers to decide what information OSHA needs or when to report an accident. Regardless of their experience in other OSHA inspections and their desire to gather more information, Trinity's duty under the standard was to immediately report the accident to OSHA. Trinity failed to report the accident for approximately fourteen hours. By the time OSHA arrived on site, several items, including the string of lights and personal effects, had been removed from the aft transom (Tr. 1472). It is speculative whether the removal of items from the accident scene did not affect OSHA's inspection. A violation of § 1904.8 is affirmed.

Items 2a - 2d - Testing and Inspecting

The citation alleges that Trinity did not test and inspect the forward and aft transoms of Barge #1 in the manner and time required by § 1915.12. Item 2a alleges that the competent person did not visually inspect the forward and aft transoms to determine the presence of

combustible or flammable liquids or gases in violation of § 1915.12(b)(1)(i). Item 2b alleges that the competent person did not test the forward and aft transoms to determine the concentration of combustible or flammable liquids or gases prior to entry in violation of § 1915.12(b)(1)(ii). Item 2c alleges that the competent person did not visually inspect the forward and aft transoms to determine the presence of toxic, corrosive, or irritant residue contaminants in violation of § 1915.12(c)(1)(i). Item 2d alleges that the competent person did not test the forward and aft transoms to determine the air concentration of toxics, corrosives, or irritants within the spaces prior to initial entry in violation of § 1915.12(c)(1)(ii).

Applicability of § 1915.12, § 1915.14³⁵

As a preliminary matter, Trinity argues that § 1915.12 and § 1915.14 are not applicable to the work performed on March 8, 1995. The standards limit coverage to enclosed or confined spaces that “contain or have contained” either combustible or flammable liquids or gases (§§ 1915.12(b)(1) and 1915.14(a)(1)(i)) or liquids, gases, or solids that are toxic, corrosive or irritant (§ 1915.12(c)(1)). The Secretary amended the previous standards for confined and enclosed spaces in shipyard employment at Part 1915 (59 Fed.Reg.. 37818, July 25, 1994; Exh. C-73). Trinity argues that the preamble to the marine standards implies that “contain or have contained” refers to bulk cargo spaces. Since the dry hopper barges at the Caruthersville shipyard are newly constructed, the hoppers have never “contained” combustible, flammable, toxic, corrosive, or irritant liquids or gases within the meaning of the standards (Resp. Brief, p. 20).

Trinity’s argument is rejected. Trinity concedes that Tectyl, the rust inhibitor sprayed inside the transoms and tanks on March 8, is a combustible liquid (Tr. 1563, 2124). Tectyl’s flash point is 106 degrees Fahrenheit and the production information sheet warns against welding on partially cured Tectyl (Exhs. C-47, C-60). Trinity also agrees that the transoms and wing tanks are enclosed spaces (Tr. 1628, 2104; Trinity Brief, p. 27). The application of the Part 1915 standards, including §1915.12 and § 1915.14 specifically, applies to new construction and shipbuilding. Malcolm Fontenette agreed that “this barge did contain combustible or flammable liquids” - Tectyl 400C-WD (Tr. 1243). Coverage under the standard is not limited to spaces which contain bulk cargo. The standard applies to any enclosed space that contains a combustible or toxic liquid or gas. The purpose of the standard is to protect employees required to work in such enclosed spaces. In spraying Tectyl inside the transoms and tanks, the spaces “contain” a flammable or combustible liquid or gas, as contemplated by §§ 1915.12 and 1915.14.

³⁵ Item 2e alleges a violation of § 1915.14(a)(1)(i).

Trinity also argues that § 1915.12 does not apply because the welding performed on March 8 was governed by § 1915.53, “Welding, cutting and heating in way of preservative coatings.” Trinity argues that the standards distinguish between new construction and repair work. In new construction the potential hazards are known and easily evaluated. The employer controls and knows the hazards associated with the enclosed spaces. Whereas, in repair work the potential hazards are unknown and difficult to evaluate (Resp. Brief, p. 20-21).

This argument also is rejected. Section 1915.12 does not exempt new construction from their application. The § 1915.12 standard applies to “confined or enclosed spaces.” With regard to preemption, where a standard provides meaningful protection to employees beyond the protection afforded by another standard, there is no preemption. *Monitor Construction Co.*, 16 BNA OSHC 1589, 1591-1592 (No. 91-1087, 1994); *Bratton Corp.*, 14 BNA OSHC 1893 (No. 83-132, 1990). A standard is not preempted unless both standards address the same particular hazard. *Williams Enterp. of Ga., Inc.*, 832 F.2d 567, 570 (11th Cir. 1987).

Section 1915.12 pertains to “[p]recautions and the order of testing before entering confined and enclosed spaces and other dangerous atmospheres.” Section 1915.53 involves “[w]elding, cutting and heating in way of preservative coatings.” Both standards were applicable to the work performed in the transoms on March 8, 1995. The employees were welding inside an enclosed space on metal applied with a preservative coating. Since § 1915.12 provides meaningful protection to employees beyond the protection afforded by § 1915.53, it is not preempted.

Interpretation of § 1915.12

In addition to arguing the applicability of § 1915.12, Trinity argues that § 1915.12 does not require the inspection of the transoms “immediately” prior to entry by the welding crew (Trinity Brief, p. 62). Section 1915.12 requires that the inspection and testing of spaces be performed “prior to initial entry.”

According to IH Grogg, OSHA has interpreted “prior to initial entry” to mean “immediately prior to entry but no more than one hour before entry” (Tr. 969). The preamble to the standard states at 59 Fed. Reg. 37832 (July 24, 1994) that:

[Pre-entry] tests must be performed close enough to the time of entry to ensure that they accurately reflect conditions in the spaces. To meet this standard, testing will nearly always be done just prior to entry by employees; seldom will tests be performed prior to an hour before employees are to enter a space.

[However] OSHA believes it is unnecessary to establish within the regulatory text of § 1915.12 a specific time limit beyond which the initial entry is not permitted after pre-entry testing. As noted in several comments, periods longer than 24 hours may be appropriate [in some cases]. OSHA has determined that the need for testing is directly related to the potential for change to occur within spaces.

Michael Slavings, designated competent person, inspected and tested the transoms and wing tanks between 4:30 - 5:30 p.m., and then he went home. The spraying of Tectyl was completed at 5:30 p.m. The welders began welding in the forward transom at 7:00 p.m. and in the aft transom at 8:00 p.m. (Tr. 1619, 2021-2011). The time lapse between testing by the competent person and the welding work inside the transoms was more than one hour.

The preamble directs that tests of the atmosphere inside an enclosed space should *seldom* be made more than one hour prior to entry. The need for testing prior to entry is directly related to the potential for change to occur over time within the space. Curtis Chambers and Malcolm Fontenette had reviewed the Federal Register prior to the accident and were aware of OSHA's definition of initial entry prior to the accident (Tr. 1265-1267, 1448). According to Trinity, the conditions inside the transoms can only stay the same or get better with the passage of time as the Tectyl cures (Tr. 1618-1619, 2010-2011).

The record shows that this was the first time welding was performed within 24 hours of applying Tectyl (Tr. 1804, 1808). Trinity's previous welding work on preservative coatings was done after the painting operation when the hot plates were replaced. Also, Michael Slavings testified that March 8, 1995, was the first time his atmosphere testing inside an enclosed space recorded levels above zero for LEL (Tr. 1981). He recorded .05 percent or 500 ppm in the forward transom and .04 percent or 400 ppm in the aft transom and #2 wing tanks (Exh. C-57). Prior to leaving the shipyard, Slavings did not retest the forward transom³⁶ and wing tanks. His hot work permit did not require fan ventilation (Tr. 1983, 2076). Trinity also agrees that welding creates changes in the atmosphere inside the enclosed spaces (Tr. 1248, 1259). The record establishes the potential for change within the transoms. However, the Secretary failed to show that Slavings' testing results did not accurately reflect the conditions inside the transoms when the crew commenced its welding work. The potential for change was not shown reasonably significant to require testing within one hour of entry.

Item 2a - Visual inspection

³⁶ Slavings' claim to have retested the aft transom is also questioned because it was not recorded or stated in his two previous written statements to OSHA.

Section 1915.12(b)(1)(i) requires a visual inspection to determine the presence of combustible or flammable liquids or gases. Trinity does not dispute that Tectyl (Stoddard solvent) is combustible (Tr. 1243, 1350). Its flash point is 106 degrees. Visual inspection is defined as the physical survey of the space, its surroundings and contents,, to identify hazards. See § 1915.11(b). Michael Slavings testified that he visually inspected the transoms and tanks by walking through the transoms and wing tanks with the MSA 361 meter (Tr. 1972, 1974-1975). Slavings knew that the spaces inside had been sprayed with Tectyl. He, however, was not familiar with the MSDS for Tectyl prior to walking through the spaces on March 8 (Tr. 2094). He could not remember when he had read the MSDS (Exh. C-44; Tr. 2079). Slavings concedes that when he inspected the spaces, he did not know the properties and hazards in welding on Tectyl; if the MSA meter checked for Stoddard solvents; if the meter measured toxicity; and how to use the conversion table to establish toxicity levels (Tr. 2070-2071, 2075).

A competent person cannot visually inspect a space for the hazards of a combustible liquid for which he is neither looking or evaluating. At the time of his inspection, Slavings did know the characteristics and potential health hazards presented by Tectyl (Tr. 886, 2070, 2075-2077). Merely walking through a space does not meet the requirements of the standard. He is required to have knowledge sufficient enough to identify potential hazards in the enclosed space. The record shows that Slavings failed to make a visual inspection of the transoms and wing tanks as contemplated by the standard. A violation of § 1915.12(b)(1)(i) is affirmed.

Item 2b - Testing

Section 1915.12(b)(1)(ii) requires testing the enclosed spaces for combustible or flammable liquids or gases. It is uncontradicted that Michael Slavings tested with the MSA 361 meter inside the transoms and tanks on March 8. He told IH Grogg from the first interviews that he had tested inside the tanks and transoms (Tr. 894-895, 898, 647-648). He tested the transoms and wing tanks between 4:30 and 5:30 p.m. (Exhs. C-44, C-45). There is no dispute that the MSA 361 meter was an acceptable meter for testing the spaces. Slavings' handwritten field notes show the results of his tests (Exh. C-57). The test results were not shown to exceed the LEL. See § 1915.12(b)(2) (equal or greater than 10 percent of the LEL). A violation of § 1915.12(b)(1)(ii) is not established.

Item 2c - Visual Inspection

Section 1915.12(c)(1)(i) requires the competent person to visually inspect the transoms and tanks to determine the presence of toxic, corrosive, or irritants within the space. There is no dispute that Tectyl (Stoddard solvent) is also a potential toxicity problem (Tr. 1186, 1350). The MSDS identified the potential toxic health effects including eye, lung, and skin problems from acute exposure (Exh. C-47). Slavings did not consult the MSDS for Tectyl to determine the nature of the potential toxicity problem or whether the levels he recorded exceeded the PEL for Stoddard solvent. Slavings was not trained to inspect for Stoddard solvent or aliphatic hydrocarbons. He was not aware of the health hazards. He did not know if the meter checked for hydrocarbons or Stoddard solvents (Tr. 1698, 2028, 2031, 2069). He was also not aware that he needed to convert the percentage readout into parts per million to establish the PEL (Tr. 2071, 2075). A violation is affirmed.

Item 2d - Testing

Section 1915.12(c)(1)(ii) requires the competent person to test enclosed spaces prior to initial entry to determine the air concentration of toxics, corrosives, or irritants within the space. As stated, Tectyl (Stoddard solvent) presents potential toxicity problems. Section 1915.12(c)(2) requires that if the space contains a concentration of air contaminants which exceeds the Table Z (§ 1915.1000) permissible exposure limit (PEL), the space is to be labeled “Not Safe for Workers.” Subpart Z, § 1915.1000, Table Z, provides that the time weighted average (TWA) for Stoddard solvent is 200 ppm.

Trinity argues that the Table Z for “air contaminants” was stayed. This argument is rejected. On June 12, 1992, OSHA proposed to update the air contaminant levels for shipyard employment to correspond to its 1989 changes to the PEL for 428 toxic substances in general industry. 57 Fed.Reg. 26002. The proposed updated PEL for Stoddard solvent was 100 ppm. The MSDS for Tectyl shows the PEL as 100 ppm (Exh. C-47). However, based on a challenge, the Eleventh Circuit vacated the new general industry standard. *AFL-CIO v. OSHA*, 965 F.2d 962 (1992). As a result, on July 1, 1993, OSHA issued technical amendments and redesignation to the shipyard employment standards delaying the updated levels and incorporating the 1970 threshold limit values (TLV) into Part 1915. 58 Fed. Reg. 35512 (July 1, 1993). As stated in the Federal Register, “Section 1915.1000 and Table Z - Shipyards merely reprint in convenient form the 1970 TLV’s which are already applicable to most operations in shipyards.” 58 Fed.Reg. at 35513. Thus, the PEL reflected in Table Z for Stoddard solvent is 200 ppm.

It is unclear that Slavings' readings obtained from the transoms and wing tanks exceeded the PEL for Stoddard solvent (Exh. C-57). His testing found 500 ppm in the forward transom, 300 ppm in the #1 wing tanks, and 400 ppm in the aft transom and #2 wing tanks (Exh. C-57). According to Table Z, the PEL for Stoddard solvent is 200 ppm for an eight-hour TWA. Slavings did not make a TWA determination. He was not trained to be concerned with toxicity hazards in a space, if there was fan ventilation (Tr. 2031). Slavings did not know the PEL for Stoddard solvent or whether his test results were below the PEL when he left the shipyard at 5:30 p.m. (Tr. 2028). He went home without knowing that ventilation was used during welding. Slavings did not label the space unsafe for workers (Tr. 2027). He also did not retest the transoms and tanks. Trinity's own policy required him to retest the atmosphere to assure acceptable levels (Exhs. C-54, C-55). Slavings failed to test the enclosed spaces. A violation of § 1915.12(c)(1)(ii) is shown.

Item 2e - Need for a Marine Chemist Certificate

The citation alleges that Trinity did not require a marine chemist certificate prior to welding inside the transoms on Barge #1 that had recently been sprayed with Tectyl 400C-WD, a preservative coating. Section 1915.14(a)(1)(i) states:

The employer shall ensure that hot work is not performed in or on any of the following confined and enclosed spaces and other dangerous atmospheres, boundaries of spaces or pipelines until the work area has been tested and certified by a Marine Chemist or a U.S. Coast Guard authorized person as "Safe for Hot Work":

- (i) Within, on, or immediately adjacent to spaces that contain or have contained combustible or flammable liquids or gases.

The standard requires a Marine Chemist or Coast Guard authorized person to test and certify areas for hot work that are within, on or immediately adjacent to spaces that contain or have contained flammable or combustible liquids or gases. The transoms and wing tanks are enclosed spaces. Tectyl is combustible (Exh. C-47; Tr. 2125). Section 1915.53(e)(1) authorizes a competent person to test and certify for hot work in enclosed spaces sprayed with a preservative coating such as Tectyl.

Section 1915.14(a)(1)(iv) exempts dry cargo vessels from requiring certification by a Marine Chemist when the standards for oxygen, flammability and toxicity in § 1915.12 are otherwise met. The Secretary failed to show that the atmosphere inside the transoms and tanks was not within the oxygen level at § 1915.12(a)(3) (between 19.5 and 22.0 percent) and the

flammable level at § 1915.12(b)(3) (not equal to or greater than 10 percent of the LEL). With regard to the toxicity level at §1915.12(c)(2) (not to exceed the PEL in Subpart Z), Slavings' test results were not shown to exceeded the PEL of 200 ppm for Stoddard solvent for an 8-hour TWA (Tr. 1975-1977). Therefore, the record fails to show that a Marine Chemist was required. A violation of § 1915.14(a)(1)(i) is vacated.

Item 2f - Changing Condition

The citation alleges that when welding commenced in the forward and aft transoms which could alter the conditions, the welding work was not stopped and the spaces visually inspected and retested. Section 1915.15(b) requires:

When a change that could alter conditions within a tested confined or enclosed space or other dangerous atmosphere occurs, work in the affected space or area shall be stopped. Work may not be resumed until the affected space or area is visually inspected and retested and found to comply with §§1915.12, 1915.13, and 1915.14 of this part, as applicable.

Malcolm Fontenette, division safety manager, testified that based on his testing 30 to 40 times, welding on Tectyl did not change conditions inside the transoms (Tr. 1330). Michael Slavings also testified that he had conducted numerous tests in the past while hot plates were being welded and found no change in conditions (Tr. 2011-2012, 2116). The test by Curtis Chambers after the accident confirmed the experiences of Fontenette and Slavings (Exh. R-23; Tr. 1554-1555, 1559). Dr Andrew Armstrong, an expert for Trinity, calculated that Trinity's fan ventilation system did not allow the accumulation of flammable vapors from Tectyl (Tr. 2204-2207). Therefore, Trinity argues that retesting was not necessary.

There is no dispute that Michael Slavings did not remain at the shipyard after 5:30 p.m. Also, there was no retesting or inspecting inside the transoms after welding commenced at 7:00 p.m. in the forward transom and 8:00 p.m. in the aft transom.

The standard requires that safe conditions are maintained within an enclosed space where the employees are working. When a change could alter the conditions within the tested spaces, work in the area should be stopped. Work cannot be resumed in the space until the space is visually inspected and retested. March 8, 1995, was the first time Michael Slavings had recorded other than zero for LEL and toxicity (Tr. 1981). His test results showed levels to .05 percent or 500 ppm in the forward transom, which may also indicate a toxicity problem (Tr. 1706). His testing was done approximately two hours before the crew commenced welding in

the forward transom. Slavings or other competent person not only failed to retest and inspect the spaces to maintain safe conditions, they did not remain on-site to ensure the conditions did not change with welding or an accumulation of Stoddard solvent vapors during Tectyl's 24-hour curing time. Slavings went home without making sure ventilation was used in the aft transom (Tr. 2026). Malcolm Fontenette, division safety manager, agrees that welding within an enclosed space can change the atmospheric conditions inside the enclosed space and that a competent person can not rely on past experience or previous results (Tr. 1203, 1247-1248). The violation of § 1915.15(b) is affirmed.

Item 2g - Retesting

The citation alleges that the designated competent person did not remain on site to conduct a visual inspection and retesting of the atmosphere in the forward and aft transoms when employees began welding on a surface coated with a combustible liquid. Section 1915.15(e) requires:

After a competent person has conducted a visual inspection and tests required in §§1915.12, 1915.13, and 1915.14 of this part and determined a space to be safe for an employee to enter, he or she shall continue to test and visually inspect spaces as often as necessary to ensure that the required atmospheric conditions within the tested space are maintained.

The standard requires the competent person to take steps to ensure the atmosphere where employees are performing work remains safe. Slavings' training as a competent person was that if he obtained test results of 20.8 percent for oxygen and zeros for LEL and toxicity and the space was ventilated, retesting the space was not necessary (Tr. 2008-2009).

As a performance standard, the preamble to § 1915.15(e) provides:

OSHA has concluded that those individuals who test an atmosphere must have the flexibility to determine the precise frequency of the testing.

Therefore, OSHA has amended the language of those requirements in this section that previously required "frequent" testing to require the testing of atmospheres "as often as necessary" in order to provide flexibility to . . . competent persons who test spaces to determine the time and need for testing . . . based on the conditions in such . . . atmospheres.

59 Fed. Reg. 37864-37847 (Exh. C-73).

The standard does not contemplate that there will be no retesting. It merely does not require frequent retesting based on the conditions. There is no dispute that Slavings went home

at 5:30 p.m. (Exh. C-56). His initial test results showed other than zeros for LEL and toxicity (Exh. C-57). Slavings testified that he had never recorded other than zeros prior to March 8 (Tr. 1981). Also, he went home before a second ventilation fan was obtained for the aft transom (Tr. 2026). He left the shipyard before employees commenced welding in the forward transom at 7:00 p.m. and in the aft transom at 8:00 p.m. (Exh. C-56). Trinity's own policies require the competent person to continue testing (Exhs. C-55 pp. 1745-1746, 1765; C-68, p. 1807). Malcolm Fontenette, Michael Slavings' competent person trainer, acknowledged that welding changes the atmospheric conditions in an enclosed space (Tr. 1203-1204). There was no assurance that the atmosphere inside the transoms would remain within safe levels (Tr. 1174, 1232-1233, 1240-1241, 1898-1899). The violation of § 1915.15(e) is affirmed.

Item 2h - Isolated Location

The citation alleges that a supervisor or attendant did not check on the employees welding in the aft transom to ensure their safety. Section 1915.94 provides in part:

When any work is performed in a confined space, except as provided in §1915.51(c)(3), or when an employee is working alone in an isolated location, frequent checks shall be made to ensure the safety of the employees.

The standard by its terms applies to a "confined space" or "isolated location." The transoms on Barge #1 are characterized by the Secretary as an "enclosed space" as opposed to "confined space." *See* definitions at § 1915.4(p) and (q). Also, there were two employees working in the aft transom as opposed to "an employee" working in an isolated location. One employee was designated the fire watch.

Trinity's confined space policy requires that an attendant be present outside the space (Exh. C-54). Travis and Ivory worked in the aft transom from 8:00 p.m. until 10:00 p.m. Anthony Quinn, crew leader, and Rodney Quinn were on the deck above the transom. Anthony Quinn called down to Travis and Ivory for the 10:00 p.m. break (Tr. 27, 267). The aft transom was not an isolated location. The violation of § 1915.94 is vacated.

Items 3a - 3d - Employee Training

The citation alleges that training was not performed prior to the onset of hot work inside the forward and aft transoms to ensure employees were familiar with potential physical and health hazards. Sections 1915.12(d)(2)(ii) (item 3a) and 1915.12(d)(2)(iii) (item 3b) provide:

The employer shall ensure that each employee who enters a confined space, enclosed space, or other areas with dangerous atmospheres is trained to:

- (ii) Anticipate and be aware of the hazards that may be faced during entry;
- (iii) Recognize the adverse health effects that may be caused by the exposure to a hazard.

Also, the citation alleges that Trinity failed to provide specific training with regard to potential physical or health hazards in welding on coated metal within an enclosed space or performing a non-routine task. Sections 1915.12(d)(4)(i) (item 3c) and 1915.12(d)(4)(ii) (item 3d) provide:

The employer shall provide each employee with training:

- (i) Before the entrant begins work addressed by this section; and
- (ii) Whenever there is a change in operations or in an employee's duties that presents a hazard about which the employee has not previously been trained.

The standards specify the topics for training employees in enclosed space entries (awareness of the hazards and adverse health affects) and the timing for providing the training (prior to work and nonroutine work). Trinity acknowledges that the potential hazards of welding gusset plates inside transoms included oxygen deficiency, explosion from flammable vapors, fire hazards from Tectyl and welding sparks or slag on clothing, and toxicity from Tectyl or welding fumes (Tr. 1628-1629, 1347).

Trinity's employees were trained on the hazards associated with various jobs at the shipyard (Tr. 1855-1858, 1376, 1452-1454, 1631-1632, 1336-1337). Employees were trained to wear a respirator and to ventilate the transoms and tanks (Tr. 248, 129, 136, 17, 56, 154). Employees testified that they understood the fire hazard from Tectyl (Tr. 36, 101, 128, 154, 179, 264). John Thacker (painter), David Norman (painter), and Anthony Quinn (welder), who did not normally work in enclosed spaces, received the same training (Exhs. R-1, R-2, R-3, R-4, R-5). Moreover, the employees testified that they knew the spaces must be tested, a Hot Work Permit issued and ventilation in place before they entered the space (Tr. 17, 23, 24-25, 35, 37, 44, 46, 53, 55-56, 100-101, 110-111, 136, 154, 166, 173-174, 175, 178, 179, 198-199, 204, 264, 247-248, 250).

The record, however, fails to show that the employees who performed welding work inside the transoms were trained with regard to health hazards associated with welding on Tectyl

(Tr. 31-32, 123, 132-134, 138, 166, 1335, 2094-2095). Regis Rumpf of Valvoline testified that the type of “aliphatic hydrocarbons” (Stoddard solvents) used in Tectyl is “the most environmentally friendly and the most worker friendly” (Tr. 596). Nevertheless, in sufficiently high quantities there is a potential for adverse health effects from breathing Stoddard solvent vapors (Tr. 1619). Tectyl’s MSDS identifies the potential health hazards (Exh. C-47). Trinity failed to assure that the competent person and Chester Sullivan, safety manager, were providing employees the information needed to recognize the adverse health effects or the other hazards of welding on Tectyl or other preservative coatings (Tr. 1174, 1232-1233, 1240-1241, 1898-1899). Anthony Quinn, welder, testified that he normally welded on metal without a preservative coating and did not know anything about Tectyl when he commenced welding in the forward transom on March 8 (Tr. 33, 40). No one reviewed the MSDS for Tectyl with the welding crew (Tr. 31). Quinn’s experience was confirmed by Elmer Jones, welder (Tr. 133, 138) and Rodney Quinn, welding leadman (Tr. 249). Violations of §§ 1915.12(d)(2)(ii) and 1915.12(d)(2)(iii) are affirmed.

With regard to when the training is provided, new employees participated in a 12-hour initial safety orientation program. Their initial training included hot work in confined spaces and hazard communication (Exhs. R-1, R-2, R-3, R-4, R-5; Tr. 54-55, 153, 173-174, 218, 228, 264). Additionally, there were weekly safety meetings. The signatures on Trinity’s Safety Meeting and Training Reports (TRI 647) show that the welding crew of March 8 (Glen Hyde, John Travis, Anthony Quinn, Wayne Ivory, Elmer Jones, and Daniel Flowers) received training several times in the six months preceding the accident on not entering enclosed spaces until it is tested and a hot work permit is issued. Travis received training on October 7, 1994 (Exh. R-4), October 21, 1994 (Exh. R-1) and January 12, 1995 (Exh. R-2). Ivory received the training on October 7, 1994 (Exh. R-4), October 14, 1994 (Exh. R-3), October 21, 1994 (R-1), and January 19, 1995 (Exh. R-5). Therefore, the record shows that employees were trained prior to entering an enclosed space to do their regular work. A violation of § 1915.12(d)(4)(i) is vacated.

The training standard also requires training whenever there is a change in work or duties which present a new hazard. In the training requirements of § 1915.12(d), a nonroutine task is defined as “a change in operations or in an employee’s duties that presents a hazard about which the employee has not previously been trained” § 1915.12(d)(4)(ii). The training requirement depends on whether the job presents a hazard on which he has not been previously trained. There is no dispute that the welding crew had not previously welded gusset plates in transoms recently sprayed with Tectyl (Tr. 33, 123, 245). Also, March 8 was the first time the competent

person recorded levels in excess of zero for LEL and toxicity. There is no showing that employees were trained on the hazards of doing hot work in an enclosed space recently coated with a preservative coating such as Tectyl. The welding work performed on March 8 was nonroutine for the welding crew. A violation of § 1915.12(d)(4)(ii) is affirmed.

Item 3e - Hazardous Chemicals

The citation alleges that Trinity failed to train employees of the potential physical and health hazards associated with welding gusset plates inside the forward and aft transoms. Section 1915.1200(h)(2)(ii) provides that “Employees shall be informed of . . . (ii) [a]ny operations in their work area where hazardous chemicals are present.”

Trinity argues that employees were trained to protect themselves from potential toxic vapors from the solvents in Tectyl by not entering until the tanks were tested, a Hot Work Permit issued, and ventilation used.

The standard requires that an employer provide employees with training on hazardous chemicals in their work area at the time of initial assignment or when a new physical or health hazard is introduced. The standard does not require an employer to review the MSDS with employees line by line. It requires the employer to inform employees of the hazardous chemicals encountered in the shipyard.

Chester Sullivan, safety manager at Caruthersville, testified that during HAZ COM training, he identifies the chemicals in the each work area, the manufacturers’ label and the MSDS (Tr. 1852). The HAZ COM training also covers the necessary protective measures (Tr. 1853-1855).

Employees, however, testified that they were not trained with regard to the hazards associated with welding on Tectyl (Tr. 31-32, 123, 132-134, 138, 166, 1335, 2095). Anthony Quinn, welder, testified that he had not seen the MSDS for Tectyl (Tr. 32). He also testified that prior to March 8, 1995, the welding crew had not welded in the paint building on metal surfaces that had recently been sprayed with an uncured preservative coating; Tectyl (Tr. 33). Chester Sullivan did not train employees to anticipate and be aware of the hazards of welding on Tectyl (Exh. C-51; Tr. 2108). Michael Slavings, designated competent person, did not instruct the welding crew to review the MSDS prior to their welding work (Tr. 2081).

Trinity’s policy holds the employee responsible for knowing what information appears on the MSDS (Exh. C-62). It requires that a crew working with a hazardous chemical have the MSDS with them while performing the work. The product information sheet for Tectyl which

Chester Sullivan testified he received from Valvoline, states in bold print: “THE PARTIALLY CURED FILM SHOULD NOT BE EXPOSED TO IGNITION SOURCES SUCH AS FLARES, FLAMES, SPARKS, EXCESSIVE HEAT OR TORCHES” (Exh. C-60). The MSDS states in Part X “Warning, combustible liquid and vapors.” Michael Slavings and Chester Sullivan failed to provide employees the information needed to anticipate and be aware of hazards of welding on Tectyl (Tr. 1174, 1232-1233, 1240-1241, 1898-1899). A violation of § 1915.1200(h)(2)(ii) is affirmed.

Item 4a - Air Line Respirators

The citation alleges that employees welding in the forward and aft transoms were not provided with air line respirators and no attendant was assigned outside the manhole opening. Section 1915.51(c)(3) provides:

When sufficient ventilation cannot be obtained without blocking the means of access, employees *in the confined space* shall be protected by air line respirators in accordance with the requirements of § 1915.152(a), and an employee on the outside of such a *confined space* shall be assigned to maintain communication with those working within it and to aid them in an emergency. [Emphasis added.]

The Secretary agrees that the forward and aft transoms constitute an “enclosed space” and not a “confined space.” See definitions at § 1915.4(p) and (q). Secretary withdraws the alleged violation of § 1915.51(c)(3) (Secretary Brief, p. 83).

Item 4b - Fire Watch

The citation alleges that the fire watch assisted in welding the gusset plates and was not watching for fires. Also, employees were not instructed to anticipate fire hazards that were present during the welding operation. Section 1915.52(b)(3) provides:

When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed and for a sufficient period of time after completion of the work to insure that no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the fire fighting equipment provided is to be used.

The standard requires that an employee (fire watch) be assigned to guard against fire while welding if normal fire preventive precautions are not sufficient. The fire watch must be instructed on the anticipated fire hazards and the use of fire fighting equipment.

The record reflects that Trinity routinely assigns an employee to act as fire watch with a fire extinguisher to extinguish any sparks or slag during welding (Tr. 24, 36, 101, 128, 150-151, 248, 254, 264, 1161, 1185, 2007, 1632, 1858-1859, 1351, 1516, 1376). IH Grogg acknowledges that employees were aware of the need for a fire watch (Tr. 1010). Fire watch training was given under several different training subjects, including fire extinguisher, confined space, burning and hot work training (Exhs. R-1, R-3, R-5 and R-14; Tr. 1849, 1858). Also, Trinity instructed the fire watch regarding potential fire hazards (Tr. 1631-1632, 1462-1463, 1848-1849, 1854, 1161, 1187). Employees acknowledge the training (Tr. 24, 36, 264, 101, 128, 134, 154, 179). Trinity also instructed employees on how to use the fire fighting equipment (Exh. R-14, meetings 2-16-95, 2-17-95, 5-20-94, 5-24-94; Tr. 1859-1861, 1848, 1849). Fire extinguishers were provided to the fire watch (Tr. 24, 150-151, 248-249, 254, 264, 1161, 1632, 1858, 1351, 1848-1849, 2007). IH Grogg's inspection found that each fire watch had a fire extinguisher with them on March 8, 1995 (Tr. 515).

On March 8, 1995, Rodney Quinn, welding crew leader, told the crew that they could "switch off" and relieve each other in their duties as fire watch and welder (Tr. 264). The Secretary considers Trinity's fire watch training deficient because the fire watch employees "were switching and also assisting with the welding, instead of just doing their job being the fire watch" (Tr. 513).

The record, however, shows that employees while on fire watch knew they were not to do anything but watch for possible fires (Exh. C-48, p. 5; Tr. 24, 180, 266). John Travis was assigned the fire watch in the aft transom (Tr. 24). There is no evidence that the fire watch was assisting the welders when working as the fire watch (Tr. 513). Rodney Quinn, leadman, testified that he did not allow the fire watch to perform other duties (Tr. 266). Elmer Jones's testimony that he sometimes worked in enclosed spaces without a fire watch is not given weight (Tr. 123). There is no showing when Jones performed such welding or that the space was sprayed with preservative coating such as Tectyl (Tr. 123). On March 8, Jones knew a fire watch was required because of Tectyl (Tr. 150, 154). In fact, he knew there were initially two fire watchers assigned in the forward transom - Wayne Ivory and Daniel Flowers (Tr. 128). The alleged violation of § 1915.52(b)(3) is vacated.

Item 5 - Emergency Rescue

The citation alleges that Trinity failed to establish an emergency rescue team on-site or make arrangements with an outside rescue team when employees performed work in an enclosed space. Section 1915.12(e) requires:

The employer shall either establish a shipyard rescue team or arrange for an outside rescue team which will respond promptly to a request for rescue service.

Trinity acknowledges that it did not have an in-house rescue team, although Chester Sullivan, shipyard safety manager, was in the process of organizing an in-house rescue team (Trinity Brief, p. 94; Tr. 724, 1866). In the meantime, Trinity argues that it arranged with the Caruthersville Fire Department to provide emergency rescue services (Tr. 1197-1200, 1866-1867). In his written statement to OSHA, Sullivan states “We currently rely on the fire department” (Exh. C-5, p. 9). Chester Sullivan testified that he personally spoke to the fire chief in January, 1995, and “confirmed” the arrangement (Tr. 1867, 1949). The standard does not require a written agreement (Tr. 840, 843).

The Secretary argues that Sullivan’s testimony should not be credited. He could not remember the specifics of his conversations with the fire chief (Tr. 1946-1947). Also, Trinity’s written fire plan does not mention the word “rescue” (Exh. C-64).

The issue is whether Trinity arranged with the local fire department for outside rescue service. Section 1915.12(e)(2) requires Trinity to inform the outside rescue team of the hazards that may be encountered when performing enclosed space rescue at the shipyard. The record does not show whether Trinity shared such information with the fire department. Sullivan testified that he took a copy of the shipyard’s fire plan to the department (Tr. 1944, 1947). The fact that he could not remember the specifics of the conversation does not mean that the required information was not provided to the fire department.

It is the Secretary’s burden to establish a violation. The Secretary failed to show that arrangements were not made with the Caruthersville Fire Department. IH Grogg did not check with the fire department (Tr. 847). The alleged violation of § 1915.12(e) is vacated.

Item 6a - Welding Fire Hazard

The citation alleges that employees welding gusset plates in the forward and aft transoms were not provided positive means such as drapes, curtains, or inerting the floor with a water

bottom to prevent sparks from contacting a combustible substance. Section 1915.52(a)(2) provides:

If the object to be welded, cut or heated cannot be moved and if all the fire hazards including combustible cargos cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.

The standard requires that if welding is done near a fire hazard then, where practical, the object to be welded should be moved away from the fire hazard or the potential fire hazard should be moved away from the object to be welded. If not practical, then “positive means shall be taken to confine the heat, sparks and slag” so they do not come in contact with the potential fire hazard. Trinity agrees that Tectyl is a fire hazard (Trinity Brief, p. 97). Tectyl was sprayed on the walls and floors inside the transoms--an enclosed space (Tr. 762-763, 767). Before the accident, there were two welding fires from the slag or sparks in the aft transom (Tr. 1771). The fires started near the employees’ feet (Tr. 1774). Also, there is no dispute that it was not practical to remove the object welded or remove the fire hazard. The issue, therefore, is whether positive means were used to confine sparks and welding slag. It is undisputed that Trinity, to protect against the fire hazard, required a fire watch, fire extinguishers, and certain personal protective equipment such as gloves, cotton clothing and face shields (Tr. 24, 2007).

These measures which are required by other standards, did not provide a “positive means” to confine the welding sparks and slag as contemplated by § 1915.52(a)(2). Trinity was aware of the requirement (Exhs. C-52, C-76). The Hot Work permit issued on March 8, 1995, required the use of fire resistant tarpaulins and the floors wet down, covered with damp sand or fire-resistant sheets (Exhs. C-52, C-76). The record shows that such items were not provided (Tr. 741). Also, a water bottom was not provided.

With regard to the water bottom, Trinity argues that a water bottom creates a potentially greater hazard (Tr. 1819). The employees use 440-480 volt welding machines (Tr. 1188, 1989-1990). Curtis Chambers, corporate safety manager, and Michael Slavings, competent person, testified to specific instances where employees had been electrocuted while welding in a damp environment or on a damp floor (Tr. 1600, 1990). Trinity claims it also had previously received a citation for permitting employees to weld on a damp floor (Tr. 1599-1600).

The Marine Chemist, after the accident, required Trinity to use a fire hose and water bottom without apparent problems (Tr. 1254, 1820-1821, 2117). Leonard Abbot, welder, testified that he welded with three inches of water on the floor. He believed there was no electrocution risk because the welder was grounded and he wore gloves (Tr. 234-235). Also,

Slavings' hot work permit issued on March 8, 1995, required a wet floor and fire-resistant tarpaulins (Exh. C-52). Such positive measures to confine the welding sparks and slag were not provided. The violation is affirmed.

Item 6b - Welding on Preservative Coatings

The citation alleges that the competent person did not test to see if Tectyl would pose a fire hazard to employees while welding gusset plates. Section 1915.53(b) provides:

Before welding, cutting or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

The standard requires a flammability test to be made on any preservative coating whose flammability is not known (Tr. 742, 1012). Trinity acknowledges that it did not test Tectyl to determine its flammability (Trinity Brief, p. 99). Trinity argues that it knew the flammability from the MSDS. Tectyl's flash point is 106 degrees (Exhs. C-47, C-60). IH Grogg agrees that an employer can rely on the MSDS to satisfy the standard's requirement (Tr. 1012, 1014-1015). The MSDS was available to employees at the Caruthersville plant (Tr. 753-754). Although Michael Slavings, competent person, did not review the MSDS, he was not asked during OSHA's inspection if he knew the flash point for Tectyl (Tr. 1015). Also, Slavings, at some time prior to the accident, had reviewed the MSDS for Tectyl. Slavings testified that he knew that Tectyl was a combustible liquid with a flash point above 100 degrees Fahrenheit (Tr. 2124-2125). The standard requires knowledge of flammability, not the exact flashpoint. Employees knew that Tectyl would flair up when a heat source was applied (Tr. 62, 134, 139-140, 201, 270). The flammability of Tectyl was known. The violation is vacated.

Item 6c - Preservative Coatings

The citation alleges that Tectyl 400C-WD was not removed from the areas where employees were to weld. Section 1915.53(e)(2) provides:

The preservative coatings shall be removed for a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be cleaned. The prohibition contained in § 1915.34(b)(2) shall apply.

Trinity's written policy for welding requires the removal of combustible or flammable material from the area before performing hot work (Exhs. C-53, p. 18; C-62, pp. 114-115). Although Michael Slavings, designated competent person, did not instruct employees on March 8 to remove Tectyl from the areas to be welded, there is no showing whether Tectyl was removed from the areas (Tr. 2115). Regis Rumpf of Valvoline testified that Tectyl can be removed by steam or special chemicals (Tr. 745).

The Secretary has the burden of proof. IH Grogg, during OSHA's inspection, did not ask about the removal of Tectyl from the areas to be welded. The seven employee witnesses were not asked about the removal of Tectyl. Michael Slavings testified that employees are routinely trained to remove the preservative coating six inches on each side of the point of welding (Tr. 2106, 2115). His testimony was uncontradicted. The violation is vacated.

Item 6d - Atmosphere Testing During Welding

The citation alleges that the competent person did not remain on-site to ensure no flammable vapors were produced after welding had commenced in the forward and aft transoms. Section 1915.53(f) provides:

Immediately after welding, cutting or heating is commenced in enclosed spaces on metal covered by soft and greasy preservatives, and at frequent intervals thereafter, a competent person shall make tests to ensure that no flammable vapors are being produced by the coatings. If such vapors are determined to be present, the operation shall be stopped immediately and shall not be resumed until such additional precautions have been taken as are necessary to ensure that the operation can be resumed safely.

There is no dispute that Michael Slavings, competent person, went home prior to employees' welding in the transoms on March 8, 1995 (Tr. 2023). He left the shipyard at 5:30 p.m. and the welding crew began welding inside the forward transom at 7:00 p.m (Exh. C-56; Tr. 128). There were no additional tests of the atmosphere inside the transoms after Slavings left the shipyard (Tr. 2023). No other competent person remained at the shipyard to test the atmosphere after the employees started welding (Exh. C-44, C-45, C-48).

The standard requires the competent person to test an enclosed space immediately after welding commences on metal covered with preservative coatings and at frequent intervals thereafter to ensure that no flammable vapors are being released. The purpose of the standard is to ensure that welding does create an unsafe accumulation of flammable vapors. It provides that if tests reveal the presence of flammable vapors "the operation shall be stopped . . . until such

additional precautions have been taken as necessary to ensure that the operation can be resumed safely.” “Safe for hot work” means that the concentration of flammable vapors is less than 10 percent of the LEL. *See* definitions at § 1915.11(b).

Tectyl is a soft, greasy preservative coating (Tr. 749, 1992, 2078). There is no dispute that Tectyl was applied inside the transoms and employees were welding gusset plates during Tectyl’s 24-hour curing time. Trinity’s policy requires the competent person to test an enclosed space immediately after welding is commenced on surfaces covered with a preservative coating (Exhs. C-54, C-55).

Trinity argues that based on its tests and experience, its fan ventilation prevented an unsafe accumulation of flammable vapors. The two fans used on March 8 were electric fans with three blades in a 20-inch diameter case which was partially placed over the entrance to the transoms (Tr. 1527). According to Curtis Chambers, corporate manager, the fans were capable of moving 3,500 cubic feet of air per minute (Tr. 1528). Trinity’s testing before March 8 showed that with ventilation the level of flammable vapors remained at zero percent of the LEL even after welding commenced (Tr. 1330, 2011-2012). The same results were found after March 8 (Tr. 1554-1555). Based on the effectiveness of fan ventilation, Trinity argues that it has taken all necessary precautions required under the standard. As long as the preservative coatings, ventilation system and type of barge remains the same, Trinity argues that there is no need for additional testing.

Trinity’s argument is rejected. Michael Slavings left the shipyard without retesting the forward transom and tanks even though the spaces recorded levels other than zero. This was the first time his testing recorded levels above zero. He also left without ensuring that a fan was used for the aft transom (Tr. 2026). The hot work permit did not instruct workers to continue ventilation (Exh. C-52). Further, Slavings conceded that at the time he left, he was not familiar with the properties of Tectyl (Tr. 2079). The MSDS for Tectyl advises to “never use welding or cutting torches on or near drums (even empty) because product (even just residue) can ignite explosively” (Exh. C-47). The product information for Tectyl warns against exposing partially cured Tectyl to “ignition sources such as flares, flames, sparks, excessive heat or torches” (Exh. C-60). Malcolm Fontenette, division safety manager and competent person, agreed that a competent person can not rely on his experience in determining the atmosphere inside an enclosed space (Tr. 1247, 1414). Therefore, Trinity’s prior experience did not relieve it of “ensuring” against unsafe accumulations of flammable vapors. The standard is clear and unambiguous. The competent person “shall make tests” after welding is commenced.

Trinity argues that any violation should be considered *de minimis* because “there was arguably a technical violation of the standard” (Trinity Brief, p. 107). The court disagrees. It was not a technical violation. The duty to test during welding is mandatory and directly bears on the health and safety of workers. The violation of § 1915.53(f) is affirmed.

Item 7 - Welding on Flammable Compounds

The citation states that Tectyl 400C-WD, used to coat inside aft transom, was found on the clothing of the two deceased employees. Section 1915.52(b)(1) provides:

No welding, cutting or heating shall be done where the application of flammable paints or the presence of other flammable compounds or of heavy dust concentrate creates a hazard.

The cure time for Tectyl is 24 hours (Exhs. C-47, C-60). Regis Rumpf of Valvoline testified that the 24-hour cure time is based on conditions at 50 percent relative humidity and 77 degrees Fahrenheit (Tr. 572). He stated that the colder the temperature, the longer Tectyl takes to cure. According to Curtis Chambers, corporate manager, the outside temperature on March 8 was 28 degrees Fahrenheit (Tr. 1509). Rumpf testified that Tectyl would never cure within 8 hours. At 12 hours, there may be some coating. However, based on Rumpf’s experience, it is extremely rare to see curing after 12 hours. If Tectyl cures too fast, the coating becomes brittle and breaks off instead of adhering to the surface. Rumpf testified that he “absolutely, positively never” would ever recommend allowing employees to weld in a space where Tectyl was recently applied because any remaining Stoddard solvent can “flash off”³⁷ when exposed to a torch (Tr. 572-576).

Trinity argues that § 1915.52(b)(1) applies to flammable paints and flammable compounds. There is no dispute that Tectyl is a compound (Exh. C-47; Tr. 418). Under the general industry standards, a combustible liquid is one with a flashpoint above 100 degrees Fahrenheit and a flammable liquid is one with a flashpoint below 100 degrees (Tr. 834, 836; also see definitions at § 1910.106(a)). Trinity argues that Tectyl is classified as a combustible.

There is no definition of combustible or flammable in the marine standards. IH Grogg agrees that there is no basis for the violation if the general industry definitions of combustible and flammable apply (Tr. 836-837). The Secretary argues that the general industry definitions do not apply to marine standards.

³⁷ "Flash off" means the temperature at which something will ignite based on exposure to a spark, a flame, or some type of ignition source.

The Secretary's argument is rejected. The shipyard employment standards distinguish between the terms flammable and combustible; *see* §§ 1915.12(b)(1), 1915.13(a)(1) and 1915.14(a)(1). The terms are separated with a disjunctive. Section 1915.35(b) indicates that OSHA treats substances differently based on their flashpoints. The MSDS for Tectyl shows the "DOT Hazard Classification" as combustible (Exh. C-47). Also, OSHA Instruction STD 2, dated November 4, 1985, identifies the general industry safety and health standards applicable to shipyard work. The STD specifically incorporates § 1910.106. Section 1910.106(a) contains the definitions for flammable and combustible, which are distinguished based on the flash point. The preamble to the final maritime standard, the "NFPA 306 (1988) is the national consensus standard that applies to work covered by revised Subpart B." 59 Fed.Reg. 37823. *See* § 1915.5. The NFPA 306 defines flammable as any liquid with a flashpoint below 80 degrees and defines a combustible as a flashpoint above 80 degrees. NFPA 306 1-5. Since § 1915.52(b)(1) applies to flammable paints or compounds, the violation is vacated.

WILLFUL CLASSIFICATION

The violations alleged in Citation No. 2 are classified as willful. A willful violation is "one committed with intentional, knowing or voluntary disregard for the requirements of the Act, or with plain indifference to employee safety." *Conie Construction, Inc.*, 16 BNA OSHC 1870, 1872 (No. 92-264, 1994). Willful violations require a "heightened awareness" of the relevant standard that demonstrates a voluntary or conscious disregard of its requirements or a plain indifference to employee safety. A showing of "malicious intent" or "venal motive" is not necessary. An employer's intentional disregard or plain indifference to its safety obligations may be established in various ways, including proof of prior citations or showing that an employer harbored a state of mind such that, if he were informed of the applicable standard, he would not care. *Morrison-Knudsen Co./Yonkers Contracting Co.*, 16 BNA OSHC 1105, 1123 (No. 88-572, 1993).

A violation, however, is not willful if the employer has a good faith belief that it was not in violation. The test for good faith is objective--whether the employer's belief concerning a factual matter, or concerning the interpretation of a rule, is reasonable under the circumstances. *General Motors Corp., Electro-Motive Division*, 14 BNA OSHC 1064, 2068 (No. 82-630 et al., 1991). An employer can make a good faith effort to comply with a standard or to eliminate a hazard even though its efforts are not entirely effective or complete. *Valdak Corp.*, 17 BNA OSHC 1135, 1139 (No. 93-239, 1995), *aff'd* 73 F.3d 1455 (8th Cir. 1996).

Trinity is a large company with an experienced safety department and knowledge of the OSHA standards. Trinity's failure to comply with the reporting, inspecting and testing, training, and fire hazard requirements show plain indifference (Tr. 696-698, 705-706, 728). An employer must make reasonable efforts to anticipate the particular hazards to which its employees may be exposed in the course of their scheduled work. *Automatic Sprinkler Corp.*, 8 BNA OSHC 1384, 1387-88 (No. 76-5089, 1980). The record, however, shows that Trinity failed to follow its own written safety programs (Tr. 708-714, 764-765). Also, Trinity maintains that it has a different opinion as to the interpretation and application of the standards. However, an employer is not free to substitute their own judgment for the requirements of a standard. *Western Waterproofing Co. v. Marshall*, 576 F.2d 139, 143 (8th Cir. 1978), *cert. denied* 439 U.S. 965 (1978).

In applying these principals, the following findings are made:

Item 1, violation of § 1904.8, involves the failure to timely report the fatal accident on March 8, 1995. Trinity chose to disregard the 8-hour reporting requirement. It knew the requirement. It was aware of OSHA's toll free 800 telephone number. Trinity was able to report the accident internally and to its attorney within 2 hours. However, it took 14 hours to report the fatalities to OSHA. Before OSHA's arrival, Trinity removed items from the aft transom, including temporary lights and personal effects. This disturbed the accident scene, which may have affected OSHA's inspection. Photographs of the scene by Curtis Chambers are not a substitute. Trinity's failure to timely report the accident is willful.

Items 2 (a, c, d, f, g), violations of §§ 1915.12(b)(1)(i), 1915.12(c)(1)(i), 1915.12(c)(1)(ii), 1915.15(b) and 1915.15(e), involve inspecting and testing the transoms and wing tanks. Michael Slavings' testing found levels in excess of readings he had recorded in the past. The level may have exceeded the PEL for Stoddard solvent. However, after recording these levels, Slavings went home without further retesting or complete instructions to employees entering the transoms to weld. He was not aware of the properties in Tectyl or its 24-hour cure time. Also, Trinity knew that welding could change conditions inside the transom. The welding crew had not previously performed welding work in the paint building in enclosed spaces that had recently been sprayed with Tectyl. Trinity's failure to properly inspect and test the transoms and wing tanks is willful.

Item 3 (a, b, d, e), violations of §§ 1915.12(d)(2)(ii), 1915.12(d)(2)(iii), 1915.12(d)(4)(ii) and 1915.1200(h)(2)(ii), involve employee training. Although the record shows that Trinity's training involved safety precautions, there is no showing that employees were trained on hazards and potential health affects from welding on uncured Tectyl. Trinity is a large corporation with

a corporate safety office, an on-site safety manager and numerous written safety programs. However, the change in routine on March 8, 1995, shows that its designated competent person and employees in the welding crew were not adequately trained. They failed to appreciate the possible hazards and health affects posed by welding in enclosed spaces sprayed with Tectyl while it was still curing and releasing Stoddard solvents. Trinity's failure to adequately train is willful.

Items 6 (a, d), violations of §§ 1915.52(a)(2) and 1915.53(f), involve welding in enclosed spaces. Although Trinity provided a fire watch and fire extinguishers, the precautions did not confine the welding sparks and slag. Also, there was no retesting of the spaces by the competent person after welding was commenced, although his tests results were above levels previously recorded. Further, the Tectyl was still curing, and Trinity knew atmosphere conditions changed with welding. The violations are willful.

PENALTY CONSIDERATIONS

The Commission is the final arbiter of penalties in all contested cases. Section 17(j) of the Occupational Safety and Health Act requires consideration of the size of the employer's business, history of previous violations, the employer's good faith, and the gravity of the violation in determining an appropriate penalty. Gravity is the principal factor.

Trinity is not entitled to credit for size, history, and good faith. Trinity is a large corporation with over 185 plants and thousands of employees. There were 180 employees working at the Caruthersville shipyard (Tr. 128, 500-501, 766). Two employees died in the accident of March 8, 1995, and the five other employees in the welding crew were exposed to hazards of welding on uncured Tectyl in an enclosed space for an extended period of time--7 p.m. to 10 p.m. (Exh. C-44, C-45, C-76; Tr. 128). It is also not disputed that Trinity has a history of previous citations and knowledge of the requirements of the shipyard employment standards.

Citation No. 1

Items 1 (a, c, d), violations of §§ 1915.7(c)(4), 1915.7(c)(6) and 1915.7(c)(7), involve the skill and knowledge of the designated competent person. Although the competent person received a 12-hour training session and was certified, his job performance was not supervised or reviewed by Trinity. Trinity failed to ensure that the competent person understood his training or performed his duties in accordance with the standards or Trinity's own written programs. The competent person's inadequate recordkeeping, his inability to know the calibration procedure,

his lack of knowledge about Tectyl, which prevented him from properly conducting his inspection and tests, and his leaving the shipyard prior to the commencement of welding work show the lack of skill and knowledge required of a competent person. He went home without retesting the spaces to make sure that his unusual tests results were eliminated with fan ventilation. A grouped penalty of \$7,000 is reasonable.

Item 2, violation of § 1915.7(d)(1), involves the inadequate records of tests and inspections performed by the competent person. Trinity concedes the inadequate recordkeeping. Satisfactory records are needed to inform the employees who may be exposed to the unsafe conditions as well as to Trinity to properly evaluate the competent person's performance. A penalty of \$2,500 is reasonable.

Item 4, violation of § 1915.92(b)(2), involves the lack of insulation for the wires for the temporary lights. This is considered an "other" than serious violation with no penalty.

Citation No. 2

Item 1, violation of § 1904.8, involves the willful failure to timely report the accident of March 8, 1995. Trinity was aware of the 8-hour requirement and consciously chose to ignore it. The standard is clear. Trinity cannot substitute its judgment as to what OSHA needs before reporting the accident. A penalty of \$5,000 is reasonable.

Items 2 (a, c, d, f, g), violations of §§ 1915.12(b)(1)(i), 1915.12(c)(1)(i), 1915.12(c)(1)(ii), 1915.15(b) and 1915.15(e), involve inspecting and testing the transoms by the designated competent person. Trinity's inspection and testing was inadequate. There was no retesting and no understanding of the hazards involved. The designated competent person obtained abnormal readings and welders were required to weld on surfaces sprayed with Tectyl during its 24-hour curing time. Trinity failed to review its competent person's job performance. A grouped penalty of \$40,000 is reasonable.

Items 3 (a, b, d, e), violations of §§ 1915.12(d)(2)(ii), 1915.12(d)(2)(iii), 1915.12(d)(4)(ii) and 1915.1200(h)(2)(ii), involve failure to provide employee training. Despite extensive written safety and health programs, employees were not trained in the hazards and health risks of welding on surfaces coated with Tectyl or when changes in their work presented new hazards. A grouped penalty of \$50,500 is reasonable.

Item 6 (a, d), violations of §§ 1915.52(a)(2) and 1915.53(f), involves failure to provide positive means to prevent welding sparks and the failure of the competent person to remain on site to retest after welding was commenced. A grouped penalty of \$30,500 is reasonable.

**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) of the Federal Rules of Civil Procedure.

ORDER

Based upon the foregoing decision, it is ORDERED that the citations be disposed of as follows:

SERIOUS CITATION NO. 1

1. Item 1a, in violation of § 1915.7(c)(4), Item 1c, in violation of § 1915.7(c)(6), and Item 1d, in violation of §1915.7(c)(7), are AFFIRMED and a grouped penalty of \$5,000 is assessed.
2. Item 1b, in violation of § 1915.7(c)(5), is VACATED.
3. Item 2, in violation of § 1915.7(d)(1), is AFFIRMED and a penalty of \$2,500 is assessed.
4. Item 3, in violation of § 1915.52(b)(2), is VACATED.
5. Item 4, in violation of § 1915.92(b)(2), is AFFIRMED as “other than serious” and no penalty is assessed.

WILLFUL CITATION NO. 2

1. Item 1, in violation of § 1904.8, is AFFIRMED and a penalty of \$5,000 is assessed.
2. Item 2a, in violation of § 1915.12(b)(1)(i); Item 2c, in violation of § 1915.12(c)(1)(i); Item 2d, in violation of § 1915.12(c)(1)(ii); Item 2f, in violation of § 1915.15(b); and Item 2g, in violation of § 1915.15(e), are AFFIRMED and a grouped penalty of \$40,000 is assessed.
3. Item 2b, in violation of § 1915.12(b)(1)(ii); Item 2e, in violation of §1915.14(a)(1)(i); and Item 2h, in violation of § 1915.94, are VACATED.
4. Item 3a, in violation of § 1915.12(d)(2)(ii); Item 3b, in violation of § 1915.12(d)(2)(iii); Item 3d, in violation of § 1915.12(d)(4)(ii); Item 3e, in violation of § 1915.1200(h)(2)(ii), are AFFIRMED and a grouped penalty of \$50,500 is assessed.
5. Item 3c, in violation of § 1915.12(d)(4)(i), is VACATED.
6. Item 4a, in violation of § 1915.51(c)(3), is WITHDRAWN by the Secretary.

7. Item 4b, in violation of § 1915.52(b)(3), is VACATED.
8. Item 5, in violation of § 1915.12(e), is VACATED.
9. Item 6a, in violation of § 1915.52(a)(2); and Item 6d, in violation of § 1915.53(f), are AFFIRMED and a grouped penalty of \$30,500 is assessed.
10. Item 6b, in violation of § 1915.53(b); and Item 6c, in violation of § 1915.53(e)(2), are VACATED.
11. Item 7, in violation of § 1915.52(b)(1), is VACATED.

Date: April 13,1998

/s/
KEN S. WELSCH
Judge