



00-0617 & 00-1908

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UNITED STATES OF AMERICA  
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION

ELAINE CHAO  
SECRETARY OF LABOR,  
Complainant,

v.

OSHRC Docket Nos. 00-0617 and 00-1908

LUNA TECH, INC.

Respondent.

**STIPULATION AND SETTLEMENT AGREEMENT**

I

The parties have reached an agreement on settlement and disposition of all outstanding issues in this proceeding currently pending before the Commission.

II

It is hereby stipulated and agreed by and between the Complainant, Secretary of Labor, and the Respondent, Luna Tech, Inc. that:

1. In her decision in Docket Number 00-06 17, Judge Nancy J. Spies vacated Citation 1, Item 4(c) alleging a serious violation of 29 C.F.R. § 1910.1 19(d)(3)(i), Citation 1, Item 7(a) alleging a serious violation of 29 C.F.R. § 1 19(g)(1)(i), Citation 1, Item 13(a) alleging a serious violation of 29 C.F.R. § 1910.132(a), Citation 1, Item 21 alleging a serious violation of 29 C.F.R. § 1910.1200(g)(i), and Citation 2, Item 4 alleging a serious violation of 29 C.F.R. § 1910.1200(e)(1)(i). Complainant hereby withdraws these citation items.

2. Respondent hereby withdraws its notice of contest to the remaining citations as alleged in Docket Number 00-0617.
3. In her decision in Docket Number 00-1908, Judge Nancy J. Spies vacated Citation 1, Item 1 alleging a serious violation of 29 C.F.R. § 1910.132(d)(2). Complainant hereby withdraws this citation item.
4. Respondent hereby withdraws its notice of contest to the remaining citations as alleged in Docket Number 00-1908.
5. Complainant hereby amends the total combined penalties in Docket Numbers 00-0617 and 00-1908 to \$50,000.
6. Respondent agrees to pay the penalty, as amended, through a first installment of \$21,000 and then in 24 equal monthly installments of \$1208.33. The payments shall be sent to the U.S. Department of Labor, OSHA, Vestavia Village, 2047 Canyon Road, Birmingham, AL 35216-1981. The first installment of \$21,000 will be due thirty (30) days after the execution of this Stipulation and Settlement, and the subsequent installments of \$1208.33 will be due the 15<sup>th</sup> day of each month thereafter until the full amount has been paid. In the event that any check is forwarded so that it is not received by the Area Office by the 20<sup>th</sup> day of the month in which it is due, the Area Office shall notify Respondent of that fact by regular mail. If payment is not received within ten (10) days of the mailing by the Area Office, the entire unpaid balance shall become due immediately.
7. Respondent agrees that, for a period of three (3) years from the date that this Stipulation and Settlement becomes a Final Order of the Commission, Respondent will have an annual safety and health audit of its worksite, conducted by a third-party certified safety or health professional consultant (i.e., Certified Industrial Hygienists or Certified Safety Professional) and will carry out the recommendations of such third-party consultant necessary to ensure continued abatement of the hazards identified in the remaining Citations in Docket Numbers 00-0617 and 00-1908. Any written reports detailing the results of the audit shall be made available to OSHA.
8. Respondent agrees, for a period of three (3) years to continue to employ a full-time safety and health director who has both training and experience in safety and health. The safety and health director will report directly to Respondent's president and will have authority to do whatever is necessary to ensure compliance with applicable OSHA standards including, but not limited to, shutting down operations.

9. Respondent agrees to ensure that all of its production employees, both hourly and salaried will be provided with all OSHA mandated safety and health training as part of their training in their respective performance requirements and job practices.
10. Respondent agrees, in the future, to comply with all applicable OSHA standards including but not limited to, the Process Safety Management Standard as referenced at 29 C.F.R. § 1910.119.
11. Complainant and Respondent agree that this Stipulation and Settlement Agreement disposes of all issues raised in the notice of contest.
12. Each party agrees to bear its own fees and other expenses incurred by such party in connection with any stage of this proceeding.
13. The agreements, statements, stipulations, and actions herein are made solely for the purpose of settling this matter economically and amicably and shall not be used for any other purpose, except for subsequent proceedings and matters brought by the Secretary of Labor directly under the

provisions of the Occupational Safety and Health (OSH) Act of 1970.

14. Respondent states that no authorized representatives of affected employees have elected party status.
15. The parties agree that this Stipulation and Settlement Agreement is effective upon execution.
16. Respondent certifies that a copy of this Stipulation and Settlement Agreement was posted at its main office on the 16 day of August 2002, pursuant to Commission Rules 7 and 100, and will remain posted for a period of ten (10) days.

Dated this 1<sup>st</sup> day of August, 2002.

Respectfully submitted,

EUGENE SCALTA  
Solicitor of Labor

**JOSEPH M. WOODWARD**  
Associate Solicitor for  
Occupational Safety and Health

DONALD G. SHALHOIJ  
Deputy Associate Solicitor for Occupational Safety and Health

Secretary of Labor,

Complainant,

v.

Luna Tech, Inc.,

Respondent.

OSHRC Docket No. 00-0617

Appearances:

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

David E. Worley, Esq.  
Ms. Kathy P. York  
Huntsville, Alabama  
For Respondent

Before: Administrative Law Judge Nancy J. Spies

**DECISION AND ORDER**

Luna Tech, Inc., manufactures fireworks at its plant, located on 20 acres of land, in Owens Cross Roads, Alabama. On September 2, 1999, explosions and fires, believed to have started in the plant's lab, damaged a large part of Luna Tech's plant. Employees Mike Ray, Michael Brookshire, and Mike Davis sustained injuries from the explosions and fire. Ray later died from his injuries.

Occupational Safety and Health Administration (OSHA) industrial hygienist Lisa Strunk arrived at the site on September 3, 1999. Agents from the Bureau of Alcohol, Tobacco and Firearms (BATF) were already on the site. Strunk was told that she could not go on the site until the BATF released it. Strunk left the site. She returned on September 7, 1999, accompanied by OSHA compliance officer Ed Keith, and conducted an inspection of the facility. OSHA compliance assistance specialist William Wilkerson also took part in the inspection, visiting the plant in October 1999.

As a result of the OSHA inspection, the Secretary issued two citations to Luna Tech on March 2, 2000. Citation No. 1 originally alleged (in 21 items and subitems) serious violations of 30 separate standards, most of which are subsections of § 1910.119, which addresses "Process safety management of highly hazardous chemicals," and is referred to as the PSM standard. On May 1, 2000, the Secretary amended Citation No. 1 in her complaint, withdrawing items 2a, 4a, and 13b. On July 18, 2000, the Secretary withdrew item 9. She also moved to amend Citation No. 1 by withdrawing items 14a and 14b, and substituting an allegation of a violation of § 1910.134(c)(2)(ii), designating it as item 14. She also moved to amend item 15 to allege it as an alternative

allegation to item 6b. The motions were granted on August 2, 2000. Luna Tech withdrew its notice of contest to items 18a and 18b prior to the hearing. The Secretary withdrew item 1 at the hearing (Tr. 297). On March 8, 2000, the Secretary withdrew item 16.

The disposition of the items and subitems of Citation No. 1 prior to this decision is as follows:

#### Items Withdrawn by the Secretary

<u>Item</u>	<u>Standard</u>	<u>Disposition</u>
1	§ 1910.22(a)(1)	Vacated
2a	§ 1910.109(b)(1)	Vacated
4a	§ 1910.119(d)(1)(vii)	Vacated
9	§ 1910.119(k)(1)	Vacated
13b	§ 1910.119(f)(1)(iii)(c)	Vacated
14a	§ 1910.134(c)(1)}	Items 14a and 14b withdrawn, and § 1910.134(c)(2)(ii) substituted as item 14
14b	§ 1910.134(e)(1)}	
15	§ 1910.147(c)(1)	Alternative allegation for item 6b
16	§ 1910.151(b)	Vacated

#### Notice of Contest Withdrawn by Luna Tech

<u>Item</u>	<u>Standard</u>	<u>Disposition</u>
18a	§ 1910.219(d)(1)	Affirmed
18b	§ 1910.219(e)(3)(i)	Affirmed

#### Items at Issue:

<u>Item</u>	<u>Standard</u>	<u>Alleged Violation</u>
2b	§ 1910.119(d)(3)(ii)	Failure to document that equipment complies with good engineering practices.
3	§ 1910.119(c)(1)	Failure to develop a written plan of action regarding implementation of the required employee participation.
4b	§ 1910.119(d)(2)(i)	Failure to include pertinent information pertaining to the technology of the process.
4c	§ 1910.119(d)(3)(i)	Failure to include pertinent information pertaining to the equipment in the process.
5	§ 1910.119(e)(1)	Failure to perform an initial process hazard analysis (hazard evaluation) on processes covered by the standard.
6a	§ 1910.119(f)(1)	Failure to develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information.
6b	§ 1910.119(f)(4) or, in the alternative, § 1910.147(c)(1)	Failure to develop and implement safe work practices to provide for the control of hazards during operations; Failure to establish a program consisting of energy control procedures, employee training, and periodic inspections on equipment.
7a	§ 1910.119(g)(1)(i)	Failure to train employees presently involved in operating a process in an overview of the process.

7b	§ 1910.1200(g)(8)	Failure to maintain in the workplace copies of the required material safety data sheets (MSDSs) for each hazardous chemical.
7c	§ 1910.1200(h)(1)	Failure to provide employees with effective information and training on hazardous chemicals in the work area at the time of their initial assignment.
8	§ 1910.119(h)(2)(i)	Failure to obtain and evaluate information regarding the contract employer's safety performance and programs.
10	§ 1910.119(l)(1)	Failure to establish and implement written procedures to manage changes to process chemicals, technology, equipment, and procedures.
11	§ 1910.119(m)(4)	Failure to prepare a report at the conclusion of an incident investigation.
12	§ 1910.119(n)	Failure to establish and implement an emergency action plan for the entire plant in accordance with the provisions of § 1910.38(a).
13a	§ 1910.132(a)	Failure to provide appropriate personal protective equipment.
14	§ 1910.134(c)(2)(ii)	Failure to establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator.
17	§ 1910.157(g)(2)	Failure to provide the education required in § 1910.157(g)(1) upon initial employment and at least annually thereafter.
19	§ 1910.242(b)	Failure to ensure that employees did not use compressed air for cleaning purposes.
20	§ 1910.307(b)	Failing to ensure that the equipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, approved for the hazardous (classified) location, or safe for the hazardous (classified) location.
21	§ 1910.1200(g)(1)	Failure to have an MSDS in the workplace for each hazardous chemical used.

Citation No. 2 alleges other-than-serious violations of four standards:

<u>Item</u>	<u>Standard</u>	<u>Alleged Violation</u>
1	§ 1904.6	Failing to retain required records in each establishment for 5 years following the end of the year to which they relate.
2	§ 1910.37(q)(1)	Failure to mark exits with a readily visible sign.
3	§ 1910.132(d)(2)	Failure to verify that the required workplace hazard assessment has been performed through a written certification.
4	§ 1910.1200(e)(1)(i)	Failure to maintain a list of the hazardous chemicals known to be present using an identity referenced on the appropriate MSDS.

A hearing was held in this matter from November 6 through November 9, 2000. Luna Tech disputes OSHA's jurisdiction over the worksite, asserting as an affirmative defense under § 4(b)(1) of the Occupational Safety and Health of 1970 (Act) that the BATF preempted OSHA's jurisdiction. The parties have filed post-hearing briefs. For the reasons stated below, Luna Tech's § 4(b)(1) defense is rejected. Items 2b, 3, 4b, 5, 6a, 7b,

7c, 10, 12, 14, 17, 19, and 20 of citation no. 1; and items 1, 2, 3, and 4 of citation no. 2 are affirmed. Items 4c, 6b, 7a, 11, 13a, and 21 of citation no. 1 are vacated.

### **Background**

Luna Tech's facility is located on 20 acres of land in Owens Cross, Alabama. The property is bisected by Richard Brannum Drive, which runs north-south. Another road, Moon Drive, runs east-west through the property and intersects Richard Brannum Drive. The west side of the plant contains the new process buildings, a grind and sieve building, a building housing a control room and break room, a raw materials warehouse, a dry storage building, and a large black powder magazine. Luna Tech has several magazines scattered throughout the property used for the storage of explosives and pyrotechnic materials (Exh. C-6; Tr. 116-119).

Luna Tech's administrative offices, shipping and receiving building, and electronics building, the "old" and "new" assembly buildings, the two press buildings, and various magazines and storage buildings were located on the east side of Richard Brannum Drive. Most of the buildings on the east side of the property sustained damage in the September 2, 1999, explosions and fires. Destroyed in the fires were the lab building and adjacent magazine; an area known as "the slab," on which were multiple buildings used to store fuels and oxidizers; two portable buildings outside the lab; and a flammable solvent storage building (Tr. 687).

Luna Tech manufactures mainly pre-packaged products, primarily fireworks known as gerbs, flash pots, and mines (Tr. 164). A gerb consists of a cylindrical tube that contains a pyrotechnic composition that produces a continuous stream of sparks (Tr. 102-103). To manufacture the gerbs, Luna Tech employees would take the raw materials of the various gerb mixes from a warehouse on the far west side of the plant to the grind and sieve building where they would weigh the materials on electronic balances (Tr. 118-119). The employees then combined the materials and put them in an electrically powered tumbler for mixing in one of the newer process buildings on the west side of the plant (Tr. 145). After tumbling, the gerb mix would be wetted with water or a water-based solution and mixed in an electrically-powered Hobart mixer in a mixing building. The mix would then be granulated to reduce its particle size in an electrically powered Stokes granulator, and then taken to a drying shed (Tr. 146-147).

After drying, the employees would take the gerb mix either to a magazine for storage or to one of the press buildings on the east side of the plant, in the production area known as "the woods," to be pressed into a gerb tube. The two press buildings were known as the "big press" building and the "small press" building, based upon the size of the pneumatically powered presses they housed (Tr. 148, 309). The employees would load multiple cardboard tubes with pyrotechnic composition and an inert clay into the press machine, which would press the material down to a predetermined degree of compaction for the particular type of gerb being made (Tr. 148, 309).

In the press buildings, the presses are separated from the press operator's work station by a poured concrete wall, with an observation window. The presses can be operated remotely from behind the concrete wall after the

tubes are set and filled. The press buildings are designed so that the force of an explosion will be diverted out the back of the buildings, through “blow out” walls made of Styrofoam (Tr. 148-151).

After the gerbs were pressed, employees drilled holes in the side of the tube and the inert clay to expose the pyrotechnic composition, prior to an electric match being glued into place (Tr. 355). Final assembly of the gerbs, including labeling of the packaging, was performed in either one of the assembly buildings (Tr. 521).

Luna Tech also manufactured pre-loaded flash pots, which are cardboard tubes loaded with pressed black powder and “flash pot composition,” which includes aluminum dust. The black powder was pressed into the tubes in one of the press buildings and final product assembly was done in the new assembly building (Tr. 104-105, 182-183).

Luna Tech also produced “mines,” by filling a cardboard tube with a charge of black powder, followed by a cluster of “mine stars.” The mines produce either color or streamer effects when the black powder charge is ignited (Tr. 104-105). Mines were manufactured in the new assembly building (Tr. 183).

Luna Tech also manufactured electric matches, which are devices “containing a small amount of pyrotechnic material that ignites when current flows through the leads and that is used to initiate the burning of pyrotechnics” (Exh. C-71, p.5). Luna Tech made batches of electric matches, with 60,000 matches in each batch. Most of these matches were of the type known as BGZD (Tr. 191-192, 197).

For some of the pyrotechnic products made by Luna Tech, employees followed written recipes which provided general information about the ingredients and amounts of each to be used for specific products. Luna Tech maintained the recipes on its computer system, and they could be printed out as needed. Some hard copies of recipes were also kept in production areas (Tr. 150-151). For their own reference, non-management employees occasionally drew rough diagrams of the products they manufactured (Tr. 288-289). The employees’ diagrams had been compiled in two binders, each referred to by employees as a “Book of Knowledge. One of these binders was kept in the new assembly building and the other was kept in the old assembly building (Tr. 288-289).

On Thursday, September 2, 1999, explosions and fires, originating in or near a concrete block building referred to as the lab, destroyed a significant part of the Luna Tech, Inc., plant. Employees Mike Ray, Michael Brookshire, and Mike Davis were all injured in the explosions. Ray subsequently died from his injuries (Tr. 109-110). The cause of the explosions was never determined. The BATF cited Luna Tech for having an unapproved storage magazine adjacent to the lab (Exh. C-72). Larry Weinman, Luna Tech’s supervisor of engineering, speculated that an initial fire or explosion in the lab ignited material on the west side of the lab, causing a second explosion. Weinman believed that the second explosion breached the wall between the lab and the unapproved magazine on the west side of the lab, resulting in another, much larger explosion from the magazine (Exh. C-75).

John Hall, OSHA's Area Office Director in Birmingham, Alabama, learned of the accident from Internet media reports. He sent industrial hygienist Lisa Strunk to the Luna Tech site to conduct an inspection on Friday, September 3, 1999. Upon arrival, Strunk encountered a large number of people from various enforcement agencies and volunteer organizations. A BATF agent directed Strunk to Madison County Fire Marshal Tony Daversa, who was the incident commander of the accident scene (Tr. 572-574). Daversa told Strunk "that OSHA would not be allowed on the premises, and ATF had control at that time" (Tr. 574).

Strunk went to the residence of Luna Tech president Tom DeWille, which is located adjacent to the worksite. Strunk met with DeWille. She presented her OSHA credentials to him. Strunk told DeWille she would return to the site after the BATF finished its investigation (Tr. 574-576).

On Tuesday, September 7, 1999, Strunk returned to Luna Tech's site, accompanied by compliance officer Ed Keith. Hall had sent them "to go back up there and to just check the status"; OSHA "didn't really know at that point if ATF had turned the site over" (Tr. 578). Strunk and Keith met with DeWille and Luna Tech vice-president (and DeWille's wife) Amanda Watermeier. Strunk and Keith learned that the BATF had left the site the previous day (Tr. 578-579). The compliance officers conducted a walkaround inspection of the site, accompanied by DeWille and Watermeier. Strunk and Keith returned to the plant several more times to interview employees (Tr. 579). As a result of OSHA's investigation, the Secretary issued the two citations that are at issue to Luna Tech on March 2, 2000.

### **Jurisdiction**

As an employer engaged in a business affecting commerce within the meaning of § 3(5) of the Act, Luna Tech is under the jurisdiction of OSHA, unless another federal agency preempts OSHA.

Section 4(b)(1) of the Act provides:

Nothing in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021), exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.

Luna Tech's assertion that the BATF preempts OSHA's jurisdiction is an affirmative defense for which Luna Tech has the burden of proof.

To prove the affirmative defense that OSHA's jurisdiction has been preempted under section 4(b)(1), the employer must show that (1) the other federal agency has the statutory authority to regulate the cited working conditions, and (2) that agency has exercised that authority by issuing regulations having the force and effect of law.

*Rockwell International Corp.*, 17 BNA OSHC 1801, 1803 (Nos. 93-45, 93-228, 93-233, 93-234, 1996).

There are no industry-wide exemptions from coverage under the Act where another agency possesses or exercises some statutory authority over an employer. It is not enough for another agency to possess regulatory

authority over a working condition; the other agency must formally invoke, or exercise, its statutory authority to regulate particular working conditions, or express its view that no regulation should occur in order to preempt OSHA. The other agency's exercise of authority ousts OSHA of jurisdiction only over the particular working conditions covered by the exercise. OSHA retains jurisdiction over working conditions not addressed by the other agency. *Baltimore & Ohio R.R. v. OSHRC*, 548 F.2d 1052, 1053-1055 (D.C. Cir 1976).

While the BATF investigated the September 2, 1999, explosions and fires (as did several other agencies), it has not subsequently asserted preemptive jurisdiction over Luna Tech's worksite. No BATF representatives appeared at the hearing to invoke the agency's jurisdiction.

Title XI of the Organized Crime Control Act of 1970 addresses the importation, manufacture, distribution, and storage of explosive materials. The Secretary of the Treasury is authorized to administer Title XI, and to prescribe rules and regulations reasonably necessary to carry out its provisions. 18 U.S.C. §§841-848. Pursuant to this authority, the Secretary promulgated regulations found at 27 C.F.R. Part 55, captioned "Commerce in Explosives" (the BATF regulations). The BATF regulations covering manufacturers of explosives require that the manufacturers be licensed, keep various records regarding the amounts and disposition of explosives, and make these records available to the BATF for inspection. All storage of explosive materials, including location and quantities, must comply with the storage provisions of Subpart K of the BATF regulations. 27 C.F.R. §§55.201-55.224. The BATF has also prescribed regulations exercising its authority to investigate accidents and fires in which there is reason to believe that explosive materials are involved. 27 C.F.R. § 55.31.

In 1990, the BATF promulgated 27 C.F.R. § 55.221, captioned, "Requirements for special fireworks, pyrotechnic compositions, and explosive materials used in assembling fireworks." 55 Fed. Reg. 3717 (Feb. 5, 1990). This regulation sets limits on the quantities of pyrotechnic and explosive materials permitted in fireworks processing buildings. It also sets storage requirements for these materials when not in immediate use, and at the end of the day's operations. It is on this regulation that Luna Tech relies in its preemption argument (Exh. R-5; Tr. 63).

The preamble to the final rule at 27 C.F.R. § 55.221, does not, however, express any intention that the BATF's jurisdiction should extend to the manufacturing process. The summary provides (55 Fed. Reg. at 3717, emphasis added):

This final rule amends regulations in 27 CFR part 55 to modify certain regulations and add new sections in subpart K *dealing with storage* to specifically address the fireworks industry. The regulations are a result of increased concern about the number and severity of explosions which have occurred on the premises of special fireworks industry members and tests on certain stored fireworks explosive materials.

The preamble notes (55 Fed. Reg. at 3718):

Six commenters opposed the requirement of § 55.221(d) that explosive powders and mixtures and unfinished and finished special fireworks be removed from a fireworks process building to an approved magazine at the end of the day's operations.

The primary objection raised was that the probability of an accidental explosion is greatest when the materials are being transported or handled, and that the requirement for increased movement and handling would enhance the probability of an accident.

As the Secretary notes, the response to this concern in the preamble indicates the BATF's recognition that additional safety regulations are needed (*Id.*): "The employment of proper safety practices when handling or moving explosive materials used in the assembly of fireworks will minimize any safety risks." Yet the BATF has promulgated no regulations requiring proper safety practices applicable to the movement or handling of pyrotechnics during manufacturing.

The exercise of the BATF's statutory authority has been limited to regulating the licensing, distribution, and storage of explosives and pyrotechnics. The BATF has not otherwise acted to regulate the practices and procedures employed by the individuals engaged in manufacturing pyrotechnics. A finding that the BATF preempts OSHA's jurisdiction of Luna Tech's worksite would leave a gap in regulating the safe manufacture of pyrotechnics. It is determined that OSHA has jurisdiction over Luna Tech's worksite.

#### **Citation No. 1**

The Secretary has the burden of proving her case by a preponderance of the evidence.

In order to establish a violation of an occupational safety or health standard, the Secretary has the burden of proving: (a) the applicability of the cited standard, (b) the employer's noncompliance with the standard's terms, (c) employee access to the violative conditions, and (d) the employer's actual or constructive knowledge of the violation (*i.e.*, the employer either knew or, with the exercise of reasonable diligence could have known, of the violative conditions).

*Atlantic Battery Co.*, 16 BNA OSHC 2131, 2138 (No. 90-1747, 1994).

In order to establish that a violation is "serious" under § 17(k) of the Act, the Secretary must establish that there is a substantial probability of death or serious physical harm that could result from the cited condition. In determining substantial probability, the Secretary must show that an accident is possible and the result of the accident would likely be death or serious physical harm. The likelihood of the accident is not an issue. *Spancrete Northeast, Inc.*, 15 BNA OSHC 1020, 1024 (No. 86-521, 1991).

#### **Applicability of the § 1910.119 (PSM) Standard**

As part of its jurisdictional argument, Luna Tech contends that it had no pyrotechnic materials that exceeded the threshold requirements specified in § 1910.119, thus removing it from OSHA's jurisdiction. This is more properly considered as an applicability issue, and is the first of the four elements of the Secretary's burden of proof. Confusion on this issue exists due to the relationship between the PSM standard and § 1910.109, which addresses "Explosives and blasting agents."

## Section 1910.109

Section 1910.109(a)(10) defines pyrotechnics as “any combustible or explosive compositions or manufactured articles designed and prepared for the purpose of producing audible or visible effects which are commonly referred to as fireworks.” Until 1992, OSHA had no regulations directly addressing the manufacture of pyrotechnics. The preamble to the PSM standard states (57 Fed. Reg. 6356, 6367 (February 24, 1992)):

Although there is an existing OSHA standard for explosives and pyrotechnics (§ 1910.109), that standard does not address the hazards associated with their manufacture. OSHA believed that the requirements contained in the proposed process safety management standard should be applied to the explosive and pyrotechnic manufacturing process because of their potential for producing a major accident during manufacture. Therefore, the proposal addressed a gap that exists in the agency’s current standard for explosives and pyrotechnics.

OSHA proposed the inclusion of two paragraphs that would regulate the manufacture of pyrotechnics and explosives. Opponents of the proposed regulation argued that the manufacture of pyrotechnics were already adequately regulated by § 1910.109 and the requirements of the BATF. OSHA disagreed with this argument, but did withdraw the two proposed paragraphs from the PSM standard (57 Fed. Reg. At 6368-6369):

After a thorough analysis of all of the information contained in this rulemaking record, OSHA remains convinced that the hazards associated with the manufacture of explosives and pyrotechnics have the potential of resulting in a catastrophic incident, and pose a significant risk to employees and that the manufacture of explosives and pyrotechnics should be covered by the provisions of the final process safety management rule.

However, the Agency has been persuaded by those participants who suggested that OSHA delete the manufacture of explosives and pyrotechnics from proposed § 1910.119, and incorporate the provisions of the process safety management standard into 29 CFR 1910.109, “Explosives and Blasting Agents.” This will have the effect of referencing in one place, the specific and significant OSHA requirements pertaining to explosives and blasting agents.

Section 1910.109(k) was thus amended to include the following paragraphs:

(2) The manufacture of explosives as defined in paragraph (a)(3) of this section shall also meet the requirements contained in § 1910.119.

(3) The manufacture of pyrotechnics as defined in paragraph (a)(10) of this section shall also meet the requirements contained in § 1910.119.

## Section 1910.119

Confusion regarding this issue arises from the interpretation of the phrase “shall also meet the requirements contained in § 1910.119.” Section 1910.119 begins immediately with a discussion of its “requirements”:

*Purpose.* This section contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire, or explosion hazards.

The troublesome part of the standard comes next:

(a) *Application.* (1) This section applies to the following:

- (i) A process which involves a chemical at or above the specified threshold quantities listed in appendix A to this section;
- (ii) A process which involves a flammable liquid or gas (as defined in 1910.1200(c) of this part) on site in one location, in a quantity of 10,000 pounds (4535.9 kg) or more[.]

As Luna Tech points out (and the Secretary does not dispute), at the time of the incident Luna Tech had only one of the chemicals (ammonium perchlorate) listed in appendix A on its premises. The threshold quantity listed in appendix A for ammonium perchlorate is 7,500 pounds. Luna Tech had approximately 500 pounds of the chemical on its premises (Tr. 72, 746). Luna Tech argues that § 1910.119 is inapplicable to its worksite because it had no chemicals or flammable liquids or gases that met the threshold quantities specified in § 1910.119(a). The company regards § 1910.109(k)(3) as ushering pyrotechnic manufacturers to the PSM standard in its entirety; the application sections of § 1910.109 and of § 1910.119(a) are two separate sets of applicability requirements that must be met individually before the employer comes within the purview of the PSM standard.

The Secretary rejects Luna Tech's approach, arguing in effect that § 1910.109(k)(3) acts as the application section for the manufacture of pyrotechnics, circumventing the application section of § 1910.119. If an employer manufactures pyrotechnics as defined by § 1910.109(a)(10), then the PSM standard applies to it regardless of the chemicals' threshold limits listed in appendix A. The issue of the PSM standard's applicability is decided by the definition of pyrotechnics found in § 1910.109(a)(10), not the threshold limits of appendix A to the PSM standard. Under the Secretary's interpretation, the application section of the PSM standard is not part of the "requirements" of the standard that pyrotechnic manufacturers must meet.

Although Luna Tech's interpretation of the application relationship between the two standards is not illogical, the preamble for the PSM standard supports the Secretary's position. As previously noted, OSHA sought to close a gap that existed in regulating pyrotechnic manufacturers. Luna Tech witness Dr. John A. Conkling is the executive director of the American Pyrotechnics Association (APA), an organization with which he has worked for almost 30 years (Tr. 11-12). He testified that he toured Luna Tech's plant twice, and that it was "standard for the industry" (Tr. 62). He stated that he did not see why "Luna Tech or companies who manufacture theatrical pyrotechnics in general" would have any reason to have more than 500 pounds of pyrotechnic materials present (Tr. 65). The express reason for amending § 1910.109 by adding paragraph (k)(3) was so the manufacturers of "pyrotechnics should be covered by the provisions of the final process safety management rule." 57 Fed. Reg. at 6367. It would subvert OSHA's intent to cover pyrotechnics manufacturers by invoking coverage only when the threshold limits of pyrotechnic materials are met, in an industry where the standard amounts of the materials on hand fall far below the threshold limits.

This position is strengthened by another comment from the preamble (*Id.* at 6369; emphasis added):

During the rulemaking process, some concern was expressed that this standard could be interpreted, inappropriately, to apply to all explosive and pyrotechnic manufacturing operations,

even those operations of the manufacturing process where explosives or pyrotechnics are not present. . . . This is not the intent of OSHA. The Agency wants to make it clear that the provisions contained in this final rule apply to explosives and pyrotechnics manufacturing operations only when such substances or other chemicals covered by the standard or in appendix A *are present*.

The quoted section does not state that the PSM standard applies only when such substances covered “in appendix A are present *in the threshold amount*.” The preamble indicates that any amount of a substance listed in appendix A triggers coverage under the PSM standard. To hold otherwise would leave the employees of pyrotechnics manufacturers unprotected by any safety standards.

It is determined that the PSM standard, § 1910.119, applies to the cited conditions at Luna Tech’s worksite.

**Item 2b: Alleged Serious Violation of § 1910.119(d)(3)(ii)**

Section 1910.119(d) of the PSM standard addresses “Process safety information,” and states:

In accordance with the schedule set forth in paragraph (e)(1) of this section, the employer shall complete a compilation of written process safety information before conducting any process hazard analysis required by the standard. The compilation of written process safety information is to enable the employer and the employees involved operating the process to identify and understand the hazards posed by those processes involving highly hazardous chemicals. This process safety information shall include information pertaining to the hazards of highly hazardous chemicals used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process.

The Secretary alleges that Luna Tech committed a serious violation of § 1910.119(d)(3)(ii), which provides:

The employer shall document that equipment complies with recognized and generally accepted good engineering practices.

The citation states that Luna Tech “did not document that all equipment throughout the facility, including but not limited to, electrical equipment such as, mixers, scales, and presses complied with recognized and generally accepted good engineering practices.”

“Recognized and generally accepted good engineering practices” includes “an employer’s own appropriate internal standards, as well as industry consensus standards.” 57 Fed. Reg. at 6390. Luna Tech president DeWille agrees that Luna Tech’s manufacturing operations are covered by a national industry consensus standard, the National Fire Protection Association 1124, *Code for the Manufacture, Transportation, and Storage of Fireworks and Pyrotechnic Articles*, 1998 Edition (NFPA 1124) (Exh. C-71; Tr. 209-212). DeWille is a member of the NFPA Technical Committee on Pyrotechnics, which promulgates NFPA 1124 (Tr. 212).

Chapter 2 of NFPA (addressing “Manufacturing Operations”), applies to all manufacturing facilities, including Luna Tech’s. It requires the wiring and equipment in process buildings to meet the requirements for

a Class II location<sup>2</sup>, and all presses and other mechanical devices used in the vicinity of pyrotechnic composition to be electrically bonded and grounded (Exh. C-71).

Luna Tech had several process buildings at its site, including the old and new assembly buildings, the press buildings, the new operating cells, the mixing buildings, and the lab. Employees used aluminum dust to fill pre-loaded flashpots in the new assembly area (Tr. 104, 183-184). Employees used black powder in proximity to electrical equipment in both the old and new assembly buildings and in the lab (Tr. 400-403, 544-545).

Luna Tech combined pyrotechnic materials and put them in a tumbler for mixing in the mixing buildings. Luna Tech also used an electrically powered Hobart mixer located in one of the new operating cells (Tr. 140-145). The company made electric matches in the new cells, using pyrotechnics (Tr. 201).

The recognized and generally accepted good engineering practices set forth in NFPA 1124 required that equipment in each of Luna Tech's process buildings be approved for Class II locations, and be bonded and grounded. In order to comply with § 1910.119(d)(3)(ii), Luna Tech needed to document that its equipment met these requirements.

Luna Tech does not argue that it actually complied with the cited standard. DeWille conceded that Luna Tech failed to document its equipment's compliance with NFPA 1124 (Tr. 299-300):

The vast majority of the equipment probably does [meet NFPA requirements]. Some of it may not exactly. . . . Generally accepted good engineering practices, certainly every effort is made in that area. I believe our biggest problem is documentation.

In its post-hearing brief, Luna Tech shifts the focus of its argument from documentation to compliance with the NFPA standards (Luna Tech's brief, pp. 10-11). Compliance with NFPA 1124 is not the issue here; the issue is documentation. Luna Tech has failed to rebut the Secretary's *prima facie* case establishing that Luna Tech did not have the required documentation. Luna Tech failed to comply with § 1910.119(d)(3)(ii).

Luna Tech argued at the hearing (but not in its brief) that item 2b is "a paper violation," and implied that the violation is *de minimis* (Tr. 621-622). This argument is rejected. The required documentation provides critical information regarding pyrotechnic manufacturing hazards. Failure to document compliance with NFPA 1124 for a piece of equipment could lead to an inadequate analysis of the hazards that it presents. Item 2b is affirmed as serious.

### **Item 3: Alleged Serious Violation of § 1910.119(c)(1)**

The Secretary alleges that Luna Tech committed a serious violation of § 1910.119(c)(1), which provides: Employers shall develop a written plan of action regarding the implementation of the employee participation required by this paragraph.

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<sup>2</sup> Class II locations are locations "that are hazardous because of the presence of combustible dust." NFPA 70.

When DeWille was asked if Luna Tech had a written plan in compliance with § 1910.119(c)(1), he replied (Tr. 301-302):

No, there wasn't because it never occurred to us that we had to write down what we were trying to think about. Every job out there is based on what everybody involved with it has for input.

At any given time, anybody could say, "stop," if there's any problem at all. Anyone can say--the janitor could say, "stop," and shut the place down. Everything that we've looked at has been a group effort because--sometimes somebody who doesn't know much comes up with the brightest answer.

In its brief, Luna Tech argues that it has a Safety Committee, whose members are volunteer employees, which meets regularly to discuss workplace hazards. As employee Dale Jobe testified, however, the Safety Committee's workings are communicated verbally. No written plan exists (Tr. 682-683).

The Secretary has established that Luna Tech failed to comply with § 1910.119(c)(1). Failure to develop a written plan deprives employees of access to information regarding their participation in process safety management. The violation is serious. Item 3 is affirmed.

**Item 4b: Alleged Serious Violation of § 1910.119(d)(2)(i)**

Section 1910.119(d) provides:

(d)(2) *Information pertaining to the technology of the process.* (i) Information concerning the technology of the process shall include at least the following:

- (A) A block flow diagram or simplified process flow diagram (see appendix B to this section);
- (B) Process chemistry;
- (C) Maximum intended inventory;
- (D) Safe upper and lower limits for such items as temperatures, pressures, flows or compositions; and
- (E) An evaluation of the consequences of deviations, including those affecting the safety and health of employees.

William Wilkerson is a compliance assistance specialist with OSHA (Tr. 380). He assisted Strunk and Keith in their inspection of Luna Tech's facility, visiting the plant on October 26, 27, and 28, 1999 (Tr. 388). Wilkerson interviewed several Luna Tech employees and management personnel, including DeWille, engineering supervisor Weinman, and production supervisor Tina Hedrick (Tr. 389-390, 435-436). Based upon these interviews, Wilkerson determined that Luna Tech did not have block or simplified process flow diagrams, and had not performed a maximum intended inventory. He also determined that Luna Tech had not evaluated the consequences of deviations from the prescribed method of work or process (Tr. 462-463, 511). DeWille conceded that Luna Tech did not have block flow diagrams (Tr. 303).

Luna Tech does not rebut the Secretary's case, but argues that its employees had no need of the written information required by the cited standard (Luna Tech's brief, p. 12): "While the elements required above may not have been in a written document on the every detail of every process, each employee had personal verbal

instruction and a common understanding of the process, inventories and the consequences of deviations.” Regardless of the employees’ verbal instructions and common understanding, § 1910.119(d) requires “a compilation of *written* process safety information,” including the technology information specified in § 1910.119(d)(2)(i). If the information is not written, as here, then a violation of the standard exists. The Secretary has established a violation of § 1910.119(d)(2)(i).

Wilkerson explained that the required information is “part of a larger process wherein you gather information regarding the technology of the process, the hazards of the materials. And then you look at this information in what they call a process hazard analysis. . . . [Y]ou can’t really do a good, beneficial process hazard analysis unless you have this information” (Tr. 464). Wilkerson stated that the purpose of requiring a written plan (Tr. 560):

is to make sure that companies look at every aspect of the operation and everything that could possibly go wrong. . . . [S]ometimes serious hazards can creep up due to a lack of detail. And, if you try to analyze a process without gathering all the necessary information you need to do so, and then spelling it out somewhere, you can overlook things.

The Secretary has established that Luna Tech’s violation of the cited standard is serious, and not the “paper” violation that the company suggests it is. Item 4b is affirmed.

#### **Item 4c: Alleged Serious Violation of § 1910.119(d)(3)(i)**

The Secretary contends that Luna Tech violated § 1910.119(d)(3)(i), which provides:

(3) *Information pertaining to the equipment in the process.* (i) Information pertaining to the equipment in the process shall include:

- (A) Materials of construction;
- (B) Piping and instrument diagrams (P&ID’s);
- (C) Electrical classification;
- (D) Relief system design and design basis;
- (E) Ventilation system design;
- (F) Design codes and standards employed;
- (G) Material and energy balances for processes built after May 26, 1992; and,
- (H) Safety systems (e.g. interlocks, detection or suppression systems).

In her brief, the Secretary fails to cite any evidence in support of her allegation that Luna Tech violated the cited standard. The record contains no reference by the Secretary or her witnesses to item 4c. The only mention of the item occurs in the testimony of DeWille, who argued that the elements of § 1910.119(d)(3)(i) do not apply to its processes, stating, “Flashpots, gerbs, and mines just don’t involve that kind of equipment” (Tr. 304). Even if DeWille’s statement that the eight elements listed in the cited standard do not apply to his company’s equipment were dubious, the Secretary has offered no evidence to contradict it. The Secretary has failed to carry her burden of proof with regard to item 4c. It is vacated.

#### **Item 5: Alleged Serious Violation of § 1910.119(e)(1)**

Section 1910.119(e)(1) provides in pertinent part:

The employer shall perform an initial process hazard analysis (hazard evaluation) on processes covered by this standard.

The citation alleges:

The employer had not performed process hazard analyses on processes covered by the process safety management standard including, but not limited to the manufacture of flash pots, gerbs, and mines in accordance with the requirements of this paragraph. The process hazard analysis should include factors including, but not limited to, facility siting, building construction (e.g. explosion relief), conductive floors, draining or handling of static electricity, and the location of the test area with respect to process areas.

Wilkerson determined through interviews that Luna Tech had not performed an initial process hazard analysis (PHA) on the covered processes. Wilkerson stated that DeWille “indicated that they had put together or he had assembled a group of employees to look at hazards at his facility, but they had not done this process yet” (Tr. 465-466).

At the hearing, DeWille attempted to establish that Luna Tech had performed the required PHAs. He stated, “You don’t stay in this business for more than 20 years without doing a serious hazard analysis of every operation that you do” (Tr. 305). DeWille followed up this generalization by running through the citation and commenting on the various factors suggested for inclusion in the PHA. DeWille’s statements must be considered self-serving and do not rebut Wilkerson’s testimony. Luna Tech failed to produce any documentary evidence supporting DeWille’s claim that it had performed the required PHA. DeWille’s off-the-cuff assessments of the factors listed in the citation do not constitute proof that Luna Tech had performed the PHAs at the time of the inspection. Failure to perform the PHAs could result in a failure to detect potential hazards, thus increasing the risk of death or serious physical injury to employees. Luna Tech committed a serious violation of § 1910.119(e)(1).

**Item 6a: Alleged Serious Violation of § 1910.119(f)(1)**

Section 1910.119(f)(1) provides:

The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements.

(i) *Steps for each operating phase:*

(A) Initial startup;

(B) Normal operations;

(C) Temporary operations;

(D) Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner.

(E) Emergency operations;

(F) Normal shutdown; and,

- (G) Startup following a turnaround , or after an emergency shutdown.
- (ii) *Operating limits:*
  - (A) Consequences of deviation; and
  - (B) Steps required to correct or avoid deviation.
- (iii) *Safety and health considerations:*
  - (A) Properties of, and hazards presented by, the chemicals used in the process;
  - (B) Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment;
  - (C) Control measures to be taken if physical contact or airborne exposure occurs;
  - (D) Quality control for raw materials and control of hazardous chemical inventory levels;
- and,
- (E) Any special or unique hazards.
- (iv) *Safety systems and their functions.*

DeWille admitted that Luna Tech did not have written operating procedures for all of its procedures (Tr. 307). He stated that Luna Tech had “operating procedures for some operations that were considered of sufficient complexity” (Tr. 308-309). Based on interviews with DeWille, Weinman, and Hedrick, Wilkerson determined that Luna Tech did not have any written operating procedures for some of its processes, and that none of the written procedures it did have were adequate to comply with the standard (Tr. 414, 496, 511, 681-683). Wilkerson also interviewed press operator David Butler, who told Wilkerson that he received weekly handwritten notes from supervisor Hedrick instructing him as to what products were needed, but that these notes did not address hazards of the processes (Tr. 403-404, 409-410).

Luna Tech had recipes and diagrams from its “Book of Knowledge.” The recipes contained little or no information regarding the hazards of manufacturing their products, and were not intended to meet the requirements set out in § 1910.119(f)(1). The recipes fail to provide the information required by the cited standard (Exhs. C-41, C-46, C-48, C-57; Tr. 309).

Luna Tech’s approach to § 1910.119(f)(1) is evident in its procedural treatment for screening black powder, a process covered by the standard. DeWille was asked if Luna Tech had a written procedure for employees to follow when screening black powder. DeWille replied, “Not that I’m aware of. It was not a frequently-done task, and it’s something that--I mean, screening is pretty much screening” (Tr. 357).

The Secretary has established a serious violation of § 1910.119(f)(1). Item 6a is affirmed.

**Item 6b: Alleged Serious Violation of § 1910.119(f)(4)  
or, in the Alternative, of § 1910.147(c)(1)**

The Secretary alleges that Luna Tech committed a serious violation of § 1910.119(f)(4) or, in the alternative, of § 1910.147(c)(1). Section 1910.119(f)(4) provides:

The employer shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor,

laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

Section 1910.147(c)(1) provides:

The employer shall establish a program consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any employee performs any servicing and maintenance on a machine or equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source, and rendered inoperative.

Wilkerson testified that item 6b was based primarily on interviews with maintenance employees Charles Farr and J. L. Jones. Wilkerson stated that Farr and Jones told him that Luna Tech did not have a written lockout/tagout program. Wilkerson believes that the cited standards require documentation of the employer's safe work practices or programs (Tr. 474-475, 497).

The Secretary is mistaken in asserting that either § 1910.119(f)(4) or 147(c)(1) require written safe practices or programs. The Review Commission addressed whether § 1910.119(f)(4) requires the safe work practices to be in writing in *Albemarle Corp.*, 18 BNA OSHC 1730, 1732 (Nos. 93-0848, 93-1715, 1999), in which the Commission stated:

We first note that, in contrast to related standards that the Secretary did not cite, § 1910.119(f)(4) does not use the word "written," or otherwise require that procedures be in writing. For example, "written" operating procedures must be developed and implemented under § 1910.119(f)(1); "readily accessible" to the employees under § 1910.119(f)(2); and "reviewed" to ensure that they reflect "current operating practice" under § 1910.119(f)(3). In contrast, while § 1910.119(f)(4) requires the development and implementation of safe work practices, it neither expressly nor by implication requires that they be in writing. Accordingly, we conclude that no writing was intended to be required.

The Secretary did not otherwise show that Luna Tech's development and implementation of safe work practices with regard to lockout/tagout and control over entrance to the facility was inadequate to comply with either of the cited standards. Wilkerson stated that Farr used his own lock to lockout an air compressor that he serviced (Tr. 476). This alone is insufficient to establish Luna Tech's noncompliance. The Secretary failed to adduce evidence that compliance officers investigated the issue beyond the interview statements of the maintenance employees. Wilkerson did not recount any statements from management personnel indicating that a lockout/tagout program did not exist, nor did the Secretary elicit any such testimony from Luna Tech's employee witnesses.

The Secretary has failed to establish that Luna Tech violated either § 1910.119(f)(4) or § 1910.147(c)(1). Item 6b is vacated.

**Item 7a: Alleged Serious Violation of § 1910.119(g)(1)(i)**

Section 1910.119(g)(1)(i) provides:

Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in paragraph (f) of this section. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.

The Secretary adduced little evidence specific to this charge. The Secretary appears to premise the violation on the fact that Luna Tech had "no written operating procedures for employees to follow" (Secretary's brief, p. 60). She also faults Luna Tech for providing only on-the-job training.

Nothing in the standard precludes on-the-job training in the safe operation of processes. The standard does not require the training program to be written. The failure to have written operating procedures is addressed above in the discussion of item 6a, in which a violation of § 1910.119(f)(1) is affirmed. To the extent that the Secretary relies on Luna Tech's failure to have written operating procedures, item 7a is duplicative of item 6a.

When asked about the training required by this standard, DeWille stated, "[N]obody was ever allowed to do anything until their supervisor and coworkers felt that they were capable of doing it correctly" (Tr. 309-310). The Secretary did not specifically challenge this statement, nor did she provide convincing evidence that Luna Tech failed to meet the requirements of this standard. Unlike her evidence in 7c, *infra*, the Secretary failed to adduce employee statements supporting her charge that employees were not trained. Item 7a is vacated.

#### **Items 7b: Alleged Serious Violation of § 1910.1200(g)(8)**

The Secretary alleges that Luna Tech committed serious violations of § 1910.1200(g)(8), which provides:

The employer shall maintain in the workplace copies of the required material safety data sheets for each hazardous chemical, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s). (Electronic access, microfiche, and other alternatives to maintaining paper copies of the material safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options.)

Strunk explained the basis for citing this standard (Tr. 580):

I interviewed an employee named Sylvia Helms. And, Ms. Helms stated to me that she had asked her supervisor for Material Safety Data Sheets, and her supervisor was Tina Hedrick. And, she said Ms. Hedrick asked her which ones. And, she stated to her that there wasn't a particular one that she wanted, but she wanted copies of all the ones that she works with on a day-to-day basis. She told me that Ms. Hedrick had never provided those to her. I asked her how long ago that had been, and she said approximately six months. And, she wasn't aware where they were maintained on site.

Helms worked as a composition processor, handling hazardous chemicals that she mixed according to Luna Tech's recipes (Exh. C-86). Luna Tech did have MSDSs for most of the hazardous chemicals in its workplace

in its “Red Book,” kept in the break room and other copies of MSDSs in the file room (Exh. C-90; Tr. 311, 580-581).

The Secretary has established a serious violation of § 1910.1200(g)(1). The cited standard requires that the MSDSs be readily accessible to employees when they are in their work area. Not only did Helms not know where they were kept, her supervisor ignored her request to see the MSDSs for the chemicals with which she worked. All employees must be informed of the location of the MSDSs in order for them to be considered accessible. The hazard is serious because the MSDSs provide crucial information regarding the appropriate responses to hazards created by the use of the chemicals. Item 7b is affirmed.

**Item 7c: Alleged Serious Violation of § 1910.1200(h)(1)**

Section 1910.1200(h)(1) provides:

Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (*e.g.*, flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.

Strunk recommended that this citation be issued based on interviews with Helms and Brenda Tabor, another composition processor. Helms told Strunk that she did not have a background in explosives and had not received training from Luna Tech on hazardous chemicals in her work area. She had not received hazardous communication training with respect to the use of MSDSs. Helms told Strunk that “the only way she knew anything about the safety and health hazards was simply what she read on a counter or label” (Tr. 585).

Strunk testified that Tabor told her she had not received safety training from Luna Tech (Tr. 588):

Ms. Tabor was on the safety committee, and she told me that after the accident that she told Mr. DeWille that she felt really uncomfortable being responsible for the safety of the people because she had not had any training herself.

And, she said--I asked her what Mr. DeWille said, and she said he said, “Well, who better to do that than the people that do the jobs themselves.”

DeWille conceded that Luna Tech did not have a formal, written hazard communication program, but he believed that the company adequately communicated the required information to its employees. His description of Luna Tech’s “training,” however, demonstrates its weaknesses (Tr. 311): “We certainly made every effort to tell people what not to do wrong, what not to eat, what not to wear, I mean, in terms of the chemicals. And, the vast majority of the chemistry there is as innocuous or less hazardous than table salt. So, the toxicity problems are minimal.”

The Secretary has established that Luna Tech committed a serious violation § 1910.1200(h)(1). Luna Tech did not have an effective training program developed for its employees. Its employees relied on self-training or

training by employees themselves untrained. Luna Tech's employees were not fully informed regarding the hazards to which they were exposed. Item 7c is affirmed.

**Item 8: Alleged Serious Violation of § 1910.119(h)(2)(i)**

Section 1910.119(h)(2) provides:

The employer, when selecting a contractor, shall obtain and evaluate information regarding the contract employer's safety performance and programs.

Luna Tech hired a construction contracting company owned by Gary Boyd to construct operating cells for the plant. DeWille knew Boyd socially prior to hiring his company. He admitted that Luna Tech did not comply with this standard (Tr. 246). DeWille rationalized his failure to meet the requirements of § 1910.119(h)(2)(i) (Tr. 312-313):

We did not obtain written information prior to the issuance of the citation. However, if you had known somebody for 20 years and you've lived next door to him for 15 of them, I mean, literally we were not quite next door neighbors. . .

I was very familiar with his work and, as I said, he hadn't been sued, he hadn't had anybody screaming about how terrible he was, and the people who worked for him seemed to think he was pretty good. The people he did work for thought he was pretty good. . . .

I was very unhappy with the guy that built the first three, and was having a casual conversation with Gary's wife about something else. We're personally acquainted as well as having just been neighbors--and, Becky said, "Would you like Gary to come out and take a look?"

And, I said, "Sure."

So, he did and we hired him.

It is clear that DeWille neither obtained nor evaluated information regarding Boyd's company safety performance and program. His opinion was based on his social relationship with Boyd. If Boyd's company had a troubled safety record, it is unlikely that he would have raised it in casual conversation with his neighbors, especially with a neighbor who was in a position to hire him.

A contractor's safety record provides important information to an employer who is considering hiring the contractor. The past safety record gives the employer an indication of the risks inherent to its own employees. The Secretary has established a serious violation of § 1910.119(h)(2)(i).

**Item 10: Alleged Serious Violation of § 1910.119(l)(1)**

The Secretary asserts that Luna Tech committed a serious violation of § 1910.119(l)(1), which provides:

The employer shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and, changes to facilities that affect a covered process.

Wilkerson testified that he interviewed Weinman and DeWille with regard to this item, and ascertained that Luna Tech did not have written procedures to manage changes to any processes, including recipe changes (Tr. 477). DeWille testified that employees could change recipes without identifying themselves (Tr. 152-153).

DeWille conceded that this unauthorized change was “potentially extremely dangerous” (Tr. 267). He also stated that the procedures to manage changes were verbal in part, in violation of the standard’s requirement that the procedure be written (Tr. 314).

The Secretary has established a serious violation of § 1910.119(l)(1).

**Item 11: Alleged Serious Violation of § 1910.119(m)(4)**

Section 1910.119(m)(1) provides:

The employer shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of [a] highly hazardous chemical in the workplace.

The Secretary alleges that Luna Tech violated § 1910.119(m)(4), which provides:

A report shall be prepared at the conclusion of the investigation which includes at a minimum:

- (i) Date of incident;
- (ii) Date investigation began;
- (iii) A description of the incident;
- (iv) The factors that contributed to the incident; and,
- (v) Any recommendations resulting from the investigation.

On June 22, 1999, lab technician Mike Davis was injured in a lab fire while making a bridge wire composition. Luna Tech filed a workers’ compensation form on June 23, 1999, captioned “Employer’s First Report of Injury or Occupational Disability.” The form does not contain the date of the investigation or any recommendations resulting from the investigation (Exh. C-70; Tr. 202). Luna Tech did not otherwise prepare an incident report (Tr. 203-204).

The Secretary contends that the workers’ compensation form that Luna Tech filed fails to meet the requirements of § 1910.119(m)(4). Section 1910.119(m)(1) requires the incident report for incidents that could reasonably result in “a catastrophic release of [a] highly hazardous chemical.” DeWille testified that the chemicals Davis was using on June 22 were potassium chlorate, copper thiocyanate, and boron (Tr. 315-316). Appendix A to § 1910.119 contains a list of highly hazardous chemicals, toxics, and reactives. The appendix lists boron trichloride and boron trifluoride, but not potassium chlorate or copper thiocyanate. Appendix A states (emphasis added):

This appendix contains a listing of toxic and reactive highly hazardous chemicals which present a potential for a catastrophic event *at or above the threshold quantity*.

It is undisputed that Luna Tech had no chemicals at or above the threshold quantities listed in Appendix A (Tr. 315). According to Appendix A, the chemicals listed present a potential for a catastrophic event only when the threshold amounts were reached.

Section 1910.119(m)(1) limits its application to incidents that did or could result in catastrophic releases of highly hazardous chemicals. It does not apply to all incidents involving highly hazardous chemicals. The Secretary has failed to adduce evidence establishing the quantities of the chemicals used by Davis in the June 1999 incident, and has failed to refute evidence that Luna Tech had no chemical at or above the threshold quantity. Item 10 is vacated.<sup>3</sup>

### **Item 12: Alleged Serious Violation of § 1910.119(n)**

Section 1910.119(n) provides:

The employer shall establish and implement an emergency action plan for the entire plant in accordance with the provisions of 29 CFR 1910.38(a). In addition, the emergency action plan shall include procedures for handling small releases. Employers covered under this standard may also be subject to the hazardous waste and emergency response provisions contained in 29 CFR 1910.120(a), (p) and (q).

Section 1910.38(a) provides that the emergency action plan be in writing and contain, at a minimum, six elements including escape routes, procedures for employees who remain to operate critical plant operations, procedures to account for all employees after evacuation, rescue and medical duties of designated employees, means of reporting fires and other emergencies, and who to contact for further information or explanation of the plan.

When asked if Luna Tech had a written emergency plan as required by § 1910.119(n), DeWille responded, “No. We were still trying to figure out how to write it. We had one in place, which was basically run, and that has been since day one, and it was not specifically in writing” (Tr. 316).

The Secretary has established Luna Tech’s failure to comply with § 1910.119(n). A written emergency plan informs employees how to respond safely in an emergency situation. The violation is serious. Item 12 is affirmed.

### **Item 13a: Alleged Serious Violation of § 1910.132(a)**

Section 1910.132(a) provides:

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by

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<sup>3</sup> Luna Tech argues that the June 22, 1999, incident is outside of the statutory period required by § 9(c) of the Act (“No citation may be issued . . . after the expiration of six months following the occurrence of any violation.”). The Secretary issued the citation for item 10 on March 2, 2000, more than nine months after the incident. The Commission has held that violations of reporting requirements, as in the case here, are continuing violations that are tolled from the date that the Secretary discovers the alleged violation, and not from the date of the incident. *See Yelvington Welding Service*, 6 BNA OSHC 2013 (No. 15 958, 1978); *General Dynamics Corp., Electric Boat Div., Quonset Point Facility*, 15 BNA OSHC 2122 (No. 87-1195, 1993). If the Secretary first discovered Luna Tech’s failure to file an adequate incident report during her September 1999 investigation of the facility, item 10 was timely cited. Because item 10 is being vacated on other grounds, it is not necessary to determine when the Secretary discovered the alleged violation.

reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

The citation alleges:

Mixing and Pressing Areas--Employees were neither provided nor required to wear all-cotton clothing with nonferrous fasteners and conductive footwear to reduce the danger of generating static electricity.

Paragraph 2-11.4 of NFPA 1124 provides:

Personnel working at or supervising mixing, pressing, and loading operations shall be provided with and shall wear cotton or other similarly effective clothing. Other protective clothing, eye protection, and respiratory protection shall be worn as needed.

DeWille testified that Luna Tech required its employees to wear long-sleeved shirts or short-sleeved shirts with kevlar sleeves, long pants, and safety glasses (Tr. 317). The Secretary finds Luna Tech's policy inadequate because it did not require its employees' clothing to be 100% cotton with nonferrous fasteners, and it did not require the use of conductive footwear.

It is noted that the only industry guideline referred to by the parties regarding this item is the above-quoted paragraph from NFPA 1124. Paragraph 2-11.4 is specific only in requiring "cotton or other similarly effective clothing." DeWille claims that the 50% cotton/50% polyester blend it allows its employees to wear is "similarly effective" to 100% cotton clothing ("Fifty/fifty cotton, polyester was demonstrated to the NFPA committee as being equivalent in terms of protection of 100% cotton" (Tr. 318)). Wilkerson claims that only 100% cotton is adequate to meet the requirements of the standard ("[E]verything I've read from the standpoint of protecting someone from burns, there's two basic types of material; it's either cotton or it's wool" (Tr. 568)). Neither party produced any documentary evidence or expert testimony supporting their respective claims.

The Secretary has the burden of proof on this issue. She has not shown that the 50/50 blend allowed by Luna Tech is not similarly effective to 100% clothing. Wilkerson's testimony that he has only read about cotton or wool clothing being adequate as protective clothing is too general and lacks the necessary details to be given any weight in determining this issue.

Likewise, paragraph 2-22.4 of NFPA 1124 mentions nothing about employees wearing conductive shoes or wearing clothing with nonferrous fasteners. Wilkerson stated at the beginning of his testimony that NFPA 1124 was the industry standard that he relied on while inspecting Luna Tech's facility (Tr. 392). In her citation, the Secretary imposes requirements on Luna Tech not found in § 1910.132(a) or NFPA 1124, or in any other industry standard submitted by her. The record contains only Wilkerson's general opinion that these measures were required. The court has been shown no evidence that compliance with § 1910.132(a) required Luna Tech to provide the specific kind of protective clothing advocated by the Secretary. Item 13a is vacated.

**Item 14: Alleged Serious Violation of § 1910.134(c)(2)(ii)**

Section 1910.134(c)(2)(ii) provides:

[T]he employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respiratory voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).

Luna Tech made available to its employees Elastomeric half-mask respirators (Tr. 322-323, 596-597). Approximately five of Luna Tech's employees voluntarily used the respirators (Tr. 649-650). These employees had not been medically evaluated for respirator use. Luna Tech did not have a written respiratory protection program (Tr. 599, 647-648).

The Secretary has established a serious violation of § 1910.134(c)(2)(ii). Item 14 is affirmed.

**Item 17: Alleged Serious Violation of § 1910.157(g)(2)**

Section 1910.157(g)(2) provides:

The employer shall provide the education required in paragraph (g)(1) of this section upon initial employment and at least annually thereafter.

Section 1910.157(g)(1) provides:

Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

Luna Tech provided portable fire extinguishers at its facility. DeWille testified that Luna Tech's policy in the event a fire broke out was, "We do not attempt to fight a fire unless it is innocuous. The directive is not to attempt to fight a fire unless it's paper, cardboard, non-pyrotechnic materials" (Tr. 286). DeWille stated that, prior to the OSHA inspection, Luna Tech did not have a formal training program and not all of Luna Tech's employees were trained informally, only "[t]hose people who had reason to use a fire extinguisher" (Tr. 326).

DeWille described Luna Tech's informal training to selected employees: "Basically you pull the pin, you aim at the base of the flame and you sweep back and forth, left to right and move in a progressive fashion from you towards the other side of the fire" (Tr. 328). He makes no mention of training in the hazards involved with incipient stage fire fighting.

The cited standard requires training "upon initial employment and at least annually thereafter," which indicates that the requirement extends to each employee. Luna Tech cannot designate only certain employees to receive the training. The standard also requires more than a description of how to operate a fire extinguisher. The

employees must be instructed in the hazards involved with incipient stage fire fighting, especially since Luna Tech's policy requires them to fight "innocuous" fires but to flee from the rest. The Secretary has established a serious violation of § 1910.157(g)(2). Item 17 is affirmed.

**Item 19: Alleged Serious Violation of § 1910.242(b)**

The Secretary alleges that Luna Tech committed a serious violation of § 1910.242(b), which provides:

Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment.

Compliance officer Keith testified that Phillip Cooper, a press operator, used an air hose in the first press room to clean his clothes. Keith determined that the hose's air pressure was 60 p.s.i. The air hose in the first press room was not equipped with a reduction nozzle to reduce the air pressure as were some of the other air hoses around the facility (Tr. 715-717). DeWille testified that he was unaware that any employee was using air hoses to clean off his clothes (Tr. 330-331). Cooper, however, told Keith that supervisor Hedrick showed him how to use the air hose for that purpose (Tr. 733).

The Secretary has established a violation of § 1910.242(b). Keith testified that air at 60 p.s.i. can cause lacerations and can blow dust particles into the pores of the skin (Tr. 729). The violation is serious. Item 19 is affirmed.

**Item 20: Alleged Serious Violation of § 1910.307(b)**

Section 1910.307(b) provides:

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

The citation alleges:

The electric equipment and wiring in the laboratory where there was the potential for combustible dust concentrations in the air and combustible dust accumulations on or in the vicinity of the electrical equipment was not approved for Class II, Division 2 locations.

Section 1910.399(a) defines a Class II, Division 2, location as:

a location in which (a) combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitable mixtures, and dust accumulations are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus; or (b) dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment, and dust accumulations resulting therefrom may be ignitable by abnormal operation or failure of electrical equipment or other apparatus.

NOTE: This classification includes locations where dangerous concentrations of suspended dust would not be likely but where dust accumulations might form on or in the vicinity of electric equipment. These areas may contain equipment from which appreciable quantities of dust would escape under abnormal operating conditions or be adjacent to a Class II division 1 location, as described above, into which an explosive or ignitable concentration of dust may be put into suspension under abnormal operating conditions.

Based on Mike Davis's statement, Wilkerson determined that the lab was a process building within the definition of NFPA 1124 because employees mixed pyrotechnic compositions and assembled pyrotechnic articles in the lab. As noted under item 2b of this decision, chapter 2 of NFPA 1124 requires the wiring and equipment in process buildings to meet the requirements for a Class II location, and all presses and other mechanical devices used in the vicinity of pyrotechnic composition to be electrically bonded and grounded (Exh. C-71).

The morning of the accident, lab employees screened at least 25 pounds of black powder in the lab to decrease the particle size of the powder (Tr. 356, 399, 456). To screen black powder, the employees would place a cup of powder into the screening device and run it for 6 minutes. They repeated this process until the entire 25 pounds had been screened. The screening of the black powder created the potential for combustible dust accumulations and airborne concentrations (Tr. 398, 457-458).

Luna Tech argues that, because the lab and its contents were destroyed in the September 2, 1999, fire, there is no proof that the lab's wiring and equipment were not approved for Class II locations. However, Wilkerson took statements from Davis and Weinman in which they stated that the lab was equipped with general purpose wiring and equipment that was not approved for a Class II, Division 2, location (Tr. 398-399, 418, 457, 520, 567). The admissions constitute proof of the non-compliant conditions.

Failure to provide the approved wiring and equipment exposed employees to the hazards of explosion and fire. The Secretary has established a serious violation of § 1910.307(b).

**Item 21: Alleged Serious Violation of § 1910.1200(g)(1)**

Section 1910.1200(g)(1) provides:

Chemical manufacturers and importers shall obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Employers shall have a material safety data sheet in the workplace for each hazardous chemical which they use.

The Secretary issued item 21 because at the time of Strunk's inspection, Luna Tech could not locate the MSDS for black powder, which Luna Tech uses in large quantities (Tr. 600-601).

Item 7b, which is affirmed above in this decision, charges Luna Tech with violating § 1910.1200(g)(8), which requires the employer to "maintain in the workplace copies of the required material safety data sheets for each hazardous chemical, and [to] ensure that they are readily accessible during each work shift to employees." The undersigned agrees with Luna Tech that item 21 is duplicative of item 7b. The focus of item 7b is on access to the MSDSs, and not their presence on the site, but both §§ 1910.1200(g)(1) and (8) require the employer to have an MSDS in the workplace for each hazardous chemical it uses. Compliance with § 1910.1200(g)(8) with regard to the MSDS for black powder would have also achieved compliance with § 1910.1200(g)(1).

Item 21 is vacated.

## **Citation No. 2**

### **Item 1: Alleged Other-than-serious Violation of § 1904.6**

Section 1904.6 provides:

Records provided for in §§ 1904.2, 1904.4, and 1904.5 (including form OSHA No. 200 and its predecessor forms OSHA No. 100 and OSHA No. 102) shall be retained in each establishment for 5 years following the end of the year to which they relate.

Strunk asked Donna Patrick, assistant to Luna Tech's supervisor of finance, business, and sales, for copies of Luna Tech's OSHA 200 logs for the years 1994-1997. Patrick gave her copies of the logs for only the years 1998 and 1999 (Tr. 614). DeWille stated that the logs for the previous years could have been destroyed in the fire, but admitted that he did not know what the OSHA 200 logs are (Tr. 335-336).

Item 1 is affirmed.

### **Item 2: Alleged Other-than-serious Violation of § 1910.37(q)(1)**

Section 1910.137(q)(1) provides:

Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants.

Wilkerson observed two unmarked exits on either end of the new assembly building. The building was approximately 50 feet long (Tr. 483). DeWille admitted the violation, but stated that since the buildings had Styrofoam walls that employees could run through in the event of an emergency, he believed exit signs were "somewhat redundant" (Tr. 337). Redundant or not, exit signs are required by the standard, and the employer may not ignore the requirement because he does not think it necessary.

Item 2 is affirmed.

### **Item 3: Alleged Other-than-serious Violation of § 1910.132(d)(2)**

Section 1910.132(d)(2) provides:

The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

DeWille admitted that Luna Tech did not verify the required workplace hazard assessment through a written certification (Tr. 338).

Item 3 is affirmed.

### **Item 4: Alleged Other-than-serious Violation of § 1910.1200(e)(1)(i)**

Section 1910.1200(e)(1)(i) provides:

Employers shall develop, implement, and maintain at each workplace, a written communication program which at least describes how the criteria specified in paragraphs (f), (g), and (h) of this

section for labels and other forms of warning, material safety data sheets, and employee information and training will be met, and which also includes the following:

(i) A list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate material safety data sheet (the list may be compiled for a workplace as a whole or for individual work areas)[.]

Luna Tech had a “Red Book” which contained the company’s safety and health manual. The Red Book did not contain a list of the hazardous chemicals known to be present in the workplace (Exh. C-90). Strunk asked Patrick for Luna Tech’s list of hazardous chemicals, but “none could be provided” (Tr. 615). DeWille stated that the company did not have a written hazard communication program, and consequently had no list of hazardous chemicals (Tr. 338-339).

Item 4 is affirmed.

### **Penalty Determination**

The Commission is the final arbiter of penalties in all contested cases. In determining an appropriate penalty, the Commission is required to consider the size of the employer’s business, history of previous violations, the employer’s good faith, and the gravity of the violation. Gravity is the principal factor to be considered.

At the time of the OSHA inspection, Luna Tech had 55 employees (Tr. 612-613). Luna Tech had no history of previous violations within the 3 years prior to the inspection (Tr. 613). No consideration will be given to Luna Tech based on good faith. The majority of the company’s OSHA violations were for failing to develop specific aspects of safety programs and for failing to train employees. Disregard for safety in the initial phases of programming and training demonstrates a lack of good faith in Luna Tech’s approach to safety.

With one exception, the gravity of the affirmed items of citation no. 1 is high. Luna Tech’s violations exposed its employees to explosion and fire hazards in a high-risk occupation. Working with pyrotechnic materials is inherently dangerous, making compliance with the pertinent safety standards all the more significant to the employees’ well-being.

The exception is item 19 of citation no. 1, for the violation of § 1910.242(b), where an employee used an air hose with air pressure in excess of 30 p.s.i. to clean his clothes. The record establishes that the employee wore safety glasses while using the air hose, and that he directed the air to his clothing, and not his bare skin (Tr. 722-723). The risk of injury to the employee was slight.

Some consideration towards penalty reduction is given for the related PSM violations. Luna Tech believed that the PSM standard did not apply to it, and consequently failed to comply with many of the documentary requirements. Because there is some overlap in these requirements, the penalties are reduced.

It is determined that the appropriate penalty for item 19 is \$500.00. The penalties for the affirmed items are:

**Citation No. 1**

<u><b>Item</b></u>	<u><b>Penalty</b></u>
2b	\$1,200
3	\$3,000
4b	\$1,000
5	§3,500
6a	<u>\$1,700</u>
7b and 7c	\$2,400
8	\$2,500
10	\$3,500
12	\$3,500
14	\$3,500
17	\$3,500
19	\$ 500
20	\$3,500
<b>Total</b>	<b>\$33,300</b>

**Citation No. 2**

<u><b>Item</b></u>	<u><b>Penalty</b></u>
1	-0-
2	-0-
3	-0-
4	-0-

**FINDINGS OF FACT AND CONCLUSIONS OF LAW**

The foregoing decision constitutes the findings of fact and conclusions of law in accordance with Federal Rule of Civil Procedure 52(a).

**ORDER**

Based upon the foregoing decision, it is hereby ORDERED that the items at issue be disposed of as follows:

**Citation No. 1**

<b><u>Item</u></b>	<b><u>Standard</u></b>	<b><u>Disposition</u></b>	<b><u>Penalty</u></b>
2b	§ 1910.119(d)(3)(ii)	Affirmed	\$1,200
3	§ 1910.119(c)(1)	Affirmed	\$3,000
4b	§ 1910.119(d)(2)(i)	Affirmed	\$1,000
4c	§ 1910.119(d)(3)(i)	Vacated	-0-
5	§ 1910.119(e)(1)	Affirmed	\$3,500
6a	§ 1910.119(f)(1)	Affirmed	\$1,700
6b	§ 1910.119(f)(4) or, in the alternative, § 1910.147(c)(1)	Vacated	-0-
7a	§ 1910.119(g)(1)(i)	Vacated	-0-
7b	§ 1910.1200(g)(8)	Affirmed	
7c	§ 1910.1200(h)(1)	Affirmed	\$2,400
8	§ 1910.119(h)(2)(i)	Affirmed	\$2,500
10	§ 1910.119(l)(1)	Affirmed	\$3,500
11	§ 1910.119(m)(4)	Vacated	-0-
12	§ 1910.119(n)	Affirmed	\$3,500
13a	§ 1910.132(a)	Vacated	-0-
14	§ 1910.134(c)(2)(ii)	Affirmed	\$3,500
17	§ 1910.157(g)(2)	Affirmed	\$3,500
19	§ 1910.242(b)	Affirmed	\$ 500
20	§ 1910.307(b)	Affirmed	\$3,500
21	§ 1910.1200(g)(i)	Vacated	-0-

**Citation No. 2**

<b><u>Item</u></b>	<b><u>Standard</u></b>	<b><u>Disposition</u></b>	<b><u>Penalty</u></b>
1	§ 1904.6	Affirmed	-0-
2	§ 1910.37(q)(1)	Affirmed	-0-
3	§ 1910.132(d)(2)	Affirmed	-0-
4	§ 1910.1200(e)(1)(i)	Vacated	-0-

/s/

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NANCY J. SPIES  
Judge

Date: November 26, 2001

Secretary of Labor,

Complainant,

v.

Luna Tech, Inc.

Respondent.

OSHRC Docket No. 00-1908

Appearances:

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

David E. Worley, Esquire  
Huntsville, Alabama  
For Respondent

Before: Administrative Law Judge Nancy J. Spies

**DECISION AND ORDER**

Luna Tech, Inc., manufactures fireworks at its plant located in Owens Cross Roads, Alabama. On March 16, 2000, Luna Tech president Thomas DeWille was seriously burned on his head, face, neck, and hands when a pyrotechnic composition with which he was working ignited.

Terry Bailey, Occupational Safety and Health Administration (OSHA) assistant area director for the Birmingham, Alabama, office, began an inspection of Luna Tech's plant on March 17, 2000. He was assisted by compliance officer Herb Snapp and senior safety specialist Terry Wilkins.

As a result of the OSHA inspection, the Secretary issued two citations to Luna Tech on September 14, 2000. Citation No. 1 contains one item that alleges a serious violation of § 1926.132(d)(2) for failure to perform a workplace hazard assessment. Citation No. 2 contains two items. Item 1 alleges a willful violation of § 1910.132(a) for failure to provide appropriate personal protective equipment. Item 2 alleges a willful violation of § 1910.307(b) for failure to ensure that "equipment, wiring methods, and installation of equipment in hazardous (classified) locations were intrinsically safe, approved for the hazardous (classified) location, or safe or for the hazardous (classified) location."

A hearing was held in this matter on June 15, 18, and 19, 2001, in Huntsville, Alabama. Luna Tech disputes OSHA's jurisdiction over the worksite, asserting as an affirmative defense under § 4(b)(1) of the Occupational Safety and Health Act of 1970 (Act) that the Bureau of

Alcohol, Tobacco, and Firearms (BATF) preempted OSHA's jurisdiction. The parties have filed post-hearing briefs. For the reasons stated below, Luna Tech's § 4(b)(1) defense is rejected. The Secretary failed to prove item 1 of Citation No. 1 but did establish items 1 and 2 of Citation No. 2.

### **Background**

Luna Tech's business for the past 20 years has been "developing, manufacturing, and distributing precision pyrotechnics and providing technical services for events or shows using pyrotechnics" (Tr. 17). Luna Tech's facility is located on 20 acres of land in Owens Cross, Alabama (Tr. 34).

The building where the accident occurred was one of nine identical buildings on the west side of Luna Tech's plant. It was built between September 1999 and March 16, 2000. The buildings were arranged in a backwards "C" pattern, surrounding a centrally located building housing a control room and break room. The nine buildings were separated from one another by concrete barriers (Exh. C-11; Tr. 35-38).

On March 16, 2000, DeWille was working in a building referred to as building number 8 (it was also known as lab building number 12) (Tr. 35). Building number 8 was approximately 11 feet, 9 inches, by 13 feet. The back wall of the building was constructed of concrete block, while the other three sides were made of steel beams with Styrofoam "blow-out" panels (Exh. C-15; Tr. 53-60). Interior heating for the building was provided by heating elements placed beneath the concrete flooring. The air conditioning unit was located outside of the building. The electrical light switches were also located outside of the building, and the electrical wiring was in steel conduit. The electrical outlets in the building were moisture-resistant. The floor was painted with conductive paint (Tr. 51-52).

On March 16, 2000, DeWille was using a core sieve shaker to mix dry ingredients to make BGZD transfer composition. BGZD transfer composition is a pyrotechnic composition used to make BGZD electric matches (Tr. 19, 24). An electric match is an electrical device containing a small amount of pyrotechnic material that ignites when current flows through the leads. It produces a burst of flame and is used to light the pyrotechnics (Exhs. C-2 and C-3; Tr. 24).

At the time of the accident, DeWille was mixing his second 1-kilogram batch of BGZD transfer composition of the day. A 1-kilogram batch of dry BGZD transfer composition consists of 750 grams of bismuth trioxide powder, 150 grams of 50/50 magnesium-aluminum alloy, which had been pre-screened through a U. S. Standard size 270 sieve screen, 100 grams of

amorphous boron, and 2 grams of Cab-O-Sil (Exh. C-20; Tr. 75-78). The bismuth trioxide was the oxidizer for the composition, and the magnesium-aluminum alloy and boron were the fuel components.

DeWille used a W. S. Tyler Model RX-86 Coarse Sieve Shaker to screen the dry ingredients for the transfer composition (Exhs. C-6 through C-10; Tr. 30-34). The purpose of sieve screening the ingredients was to mix the particles thoroughly. Since all of the materials were of the desired particle size prior to sieving, screening the materials did not have the effect of decreasing the particle size further, only of breaking up lumps of the material and ensuring that the dry transfer composition mixture was homogenous (Tr. 84).

As he was sieve screening the second batch, the BGZD transfer composition ignited, seriously burning DeWille on his head, face, neck, and hands. DeWille spent approximately one week in the burn unit of a Birmingham hospital, received treatment as an outpatient for 2 to 3 weeks in Huntsville, and also spent time in Europe receiving scar-reducing treatments (Tr. 19-20).

OSHA area director Terry Bailey arrived at Luna Tech's site the day after the accident and began the OSHA inspection. As a result of the inspection, the Secretary issued the citations that give rise to the present case.

### **Jurisdiction**

As an employer engaged in a business affecting commerce within the meaning of § 3(5) of the Act, Luna Tech is under the jurisdiction of OSHA, unless another federal agency preempts OSHA.

Section 4(b)(1) of the Act provides:

Nothing in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021), exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.

Luna Tech's assertion that the BATF preempts OSHA's jurisdiction is an affirmative defense for which Luna Tech has the burden of proof.

To prove the affirmative defense that OSHA's jurisdiction has been preempted under section 4(b)(1), the employer must show that (1) the other federal agency has the statutory authority to regulate the cited working conditions, and (2) that agency has exercised that authority by issuing regulations having the force and effect of law.

*Rockwell International Corp.*, 17 BNA OSHC 1801, 1803 (Nos. 93-45, 93-228, 93-233, 93-234, 1996); *MEI Holdings, Inc., d/b/a Martin Electronics, Inc.*, 18 BNA OSHC 2025, footnote 1 (No. 96-740, 2000).

There are no industry-wide exemptions from coverage under the Act simply because another agency possesses or exercises some statutory authority over an employer. It is not enough for another agency to possess regulatory authority over a working condition in order to preempt OSHA; the other agency must formally invoke, or exercise, its statutory authority to regulate particular working conditions, or express its view that no regulation should occur. The other agency's exercise of authority ousts OSHA of jurisdiction only over the particular working conditions covered by the exercise. OSHA retains jurisdiction over working conditions not addressed by the other agency. *Baltimore & Ohio R.R. v. OSHRC*, 548 F. 2d 1052, 1053-1055 (D.C. Cir 1976).

The BATF also investigated the fire on March 17, 2000. Wilkins was aware that BATF representatives had been on the site that day, but he had no contact with them (Tr. 324). The BATF has not subsequently asserted preemptive jurisdiction over Luna Tech's work site. Luna Tech presented no witness representatives of the BATF at the hearing.

Title XI of the Organized Crime Control Act of 1970 (Title XI) addresses the importation, manufacture, distribution, and storage of explosive materials. The Secretary of the Treasury is authorized to administer Title XI, and to prescribe rules and regulations reasonably necessary to carry out its provisions. 18 U.S.C. §§ 841-848. Pursuant to this authority, the Secretary promulgated regulations found at 27 C.F.R. Part 55, captioned "Commerce in Explosives" (the BATF regulations). The BATF regulations covering manufacturers of explosives require that the manufacturers be licensed, keep various records regarding the amounts and disposition of explosives, and make these records available to the BATF for inspection. All storage of explosive materials, including location and quantities, must comply with the storage provisions of Subpart K of the BATF regulations. 27 C.F.R. §§ 55.201-55.224. The BATF has also prescribed regulations exercising its authority to investigate accidents and fires in which there is reason to believe that explosive materials are involved. 27 C.F.R. § 55.31.

In 1990, the BATF promulgated 27 C.F.R. § 55.221, captioned, "Requirements for special fireworks, pyrotechnic compositions, and explosive materials used in assembling fireworks." 55 Fed. Reg. 3717 (Feb. 5, 1990). This regulation sets limits on the quantities of pyrotechnic and explosive materials permitted in fireworks processing buildings. It also sets

storage requirements for these materials when not in immediate use, and at the end of the day's operations.

The preamble to the final rule at 27 C.F.R. § 55.221, does not, however, express any intention that the BATF's jurisdiction should extend to the manufacturing process. The summary provides (55 Fed. Reg. at 3717, emphasis added):

This final rule amends regulations in 27 CFR part 55 to modify certain regulations and add new sections in subpart K *dealing with storage* to specifically address the fireworks industry. The regulations are a result of increased concern about the number and severity of explosions which have occurred on the premises of special fireworks industry members and tests on certain stored fireworks explosive materials.

The preamble notes (55 Fed. Reg. at 3718):

Six commenters opposed the requirement of § 55.221(d) that explosive powders and mixtures and unfinished and finished special fireworks be removed from a fireworks process building to an approved magazine at the end of the day's operations.

The primary objection raised was that the probability of an accidental explosion is greatest when the materials are being transported or handled, and that the requirement for increased movement and handling would enhance the probability of an accident.

The response to this concern in the preamble indicates the BATF's recognition that additional safety regulations are needed (*Id.*): "The employment of proper safety practices when handling or moving explosive materials used in the assembly of fireworks will minimize any safety risks." Yet the BATF has promulgated no regulations requiring proper safety practices applicable to the movement or handling of pyrotechnics during manufacturing.

At the hearing, Luna Tech introduced into evidence various licenses and other documents pertaining to the BATF (Exh. R-8). Subsequent to the hearing, Luna Tech filed a motion "to re-open case for admission of new evidence and developments concerning jurisdiction," along with what purports to be the BATF's denial of Luna Tech's renewal application for a license as a manufacturer of binary explosives. Luna Tech cites no authority for a post-hearing filing of documentary evidence. The document is not signed and contains no letterhead or other heading to indicate that it was actually issued by the BATF. The denial is based on twelve counts. The first six relate to improper storage of explosive materials. The last six counts relate to false information provided by Luna Tech on the renewal application regarding illegal drug use. Nothing in the purported BATF denial predicates the denial on improper pyrotechnic manufacturing processes. Absent any indication that the denial originated with the BATF, the

document will be given no consideration in this issue. But even if the document were properly authenticated as a BATF denial of license, it would be given no weight because the denial contains no assertion by the BATF over the manufacturing processes that is the basis of this case.

The exercise of the BATF's statutory authority has been limited to regulating the licensing, distribution, and storage of explosives and pyrotechnics. The BATF has not otherwise acted to regulate the practices and procedures employed by the individuals engaged in manufacturing pyrotechnics. The Supreme Court recently clarified that to exercise authority, an agency must actually assert regulatory authority, rather than merely possess it. *Mallard Bay Drilling, Inc.*, 534 S. Ct. 659 (2002). Luna Tech has failed to show that the BATF asserted authority over the pyrotechnic manufacturing process. A finding that the BATF preempts OSHA's jurisdiction of Luna Tech's worksite would leave a gap in regulating the safe manufacture of pyrotechnics. It is determined that OSHA has jurisdiction over Luna Tech's worksite.<sup>4</sup>

#### **Citation No. 1**

The Secretary has the burden of proving her case by a preponderance of the evidence.

In order to establish a violation of an occupational safety or health standard, the Secretary has the burden of proving: (a) the applicability of the cited standard, (b) the employer's noncompliance with the standard's terms, (c) employee access to the violative conditions, and (d) the employer's actual or constructive knowledge of the violation (*i.e.*, the employer either knew or, with the exercise of reasonable diligence could have known, of the violative conditions).

*Atlantic Battery Co.*, 16 BNA OSHC 2131, 2138 (No. 90-1747, 1994).

#### **Item 1: Alleged Serious Violation of § 1910.132(d)(2)**

The Secretary alleges that Luna Tech committed a serious violation of § 1910.132(d)(2), which provides:

The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the

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<sup>4</sup> Luna Tech also asserts, as a jurisdictional argument, an applicability argument that it asserted in a previous case, contending that it operates with quantities of pyrotechnic substances that are less than the threshold amounts listed in § 1910.119, the process safety management (PSM) standard. This argument is puzzling because the Secretary did not cite the PSM in the present case, as she had in the previous one. The three standards the Secretary did cite do not contain minimum threshold amounts of pyrotechnic substances. The Secretary's jurisdiction and the applicability of the cited standards are not predicated upon the amount of pyrotechnic substances on site at the time of the March 16, 2000, fire. Luna Tech's argument is rejected.

hazard assessment; and, which identifies the document as a certification of hazard assessment.

The citation alleges that, on the day of the fire, DeWille “began preparation of an explosive mixture commonly referred to as ‘transfer comp’ without first performing an assessment to determine the appropriate PPE needed to protect against the potential explosion and fire hazards associated with using a new sieve shaker to mix the dry flammable solids.”

At the time of the fire, DeWille and assistant Rebecca Wimbish were wearing safety glasses, cotton coveralls, and conductive shoes as PPE. (Wimbish exited building number 8 before the fire ignited) (Tr. 109-111, 155). Wilkins testified that he recommended the citation based on his interview with DeWille. Wilkins “determined that there was not really an assessment made to determine what would be the appropriate personal protective equipment for that type of operation” (Tr. 346). He stated, “It was my opinion, based on experience, that this type of personal protective equipment would not be adequate for the hazards” (Tr. 346).

DeWille testified that he made a hazard assessment before he began the transfer comp preparation, and it was his assessment that he and his assistant should wear coveralls, safety glasses, and conductive shoes. DeWille stated, “I covered as much of my body as I could and still function; still work” (Tr. 155).

Lawrence Weinman, Luna Tech’s supervisor of engineering, testified that Luna Tech assessed the workplace hazards in late 1999 following an accident that year (Tr. 600). Weinman and others in Luna Tech’s management discussed requiring the use of gloves and face shields when using the sieve shaker (Tr. 601-602). Luna Tech determined that gloves were not appropriate because they limited the employee’s manual dexterity. Weinman stated that the use of face shields was rejected due to anecdotal evidence that the flames could come up under the shield, and “that there have been a few cases where the face shield has melted and kind of stuck to somebody’s face” (Tr. 563).

It is the Secretary’s position that, despite the testimony of DeWille and Weinman, and the fact that both DeWille and Wimbish were wearing some PPE, Luna Tech did not make the required assessment because DeWille was not wearing a face shield or gloves (Tr. 346-347). According to the Secretary, if Luna Tech did not reach the same conclusion as to what constituted appropriate PPE as she did, then the assessment was not compliant with § 1910.132(d)(2). In taking this position, the Secretary is adding another element to the cited standard, one not contained within the language of the standard itself.

Apparently recognizing the weakness of her case, the Secretary attempts to bring new charges in her post-hearing brief. She moves, pursuant to FRCP 15(b), to amend item 1 of the citation to allege that Luna Tech failed to provide a written certification of its hazard assessment, or, in the alternative, to allege a violation of § 1910.132(d)(1)(i), for failure to select appropriate PPE (Secretary's brief, p. 21). The requirement of a written certification of the assessment is one of the elements of the cited standard. However, the Secretary alleged in the citation that Luna Tech failed to make an assessment, not that it failed to verify the assessment through written certification. Wilkins is clear in his testimony that the Secretary's citation was based on his determination that Luna Tech did not make the required assessment. Although the cited standard requires the employer to verify the workplace hazard assessment through a written certification, the issue of the certification was not fully explored at the hearing. Wilkins was asked if he requested a copy of a written certification. He replied, "I believe that was a request that was made of Luna Tech, yes." When asked if one was produced, Wilkins stated, "To my knowledge, no" (Tr. 346). Such cursory treatment does not establish that Luna Tech failed to certify in writing its workplace hazard assessment. It would be unfair to impose a post-hearing requirement on Luna Tech to provide written certification of its workplace hazard assessment, when the focus during the three-day hearing was whether an adequate assessment ever took place.

Section 1910.103(d)(1)(i) requires that, after the employer has assessed the workplace, it shall "[s]elect, and have each employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment." By alleging the violation of this standard in the alternative, the Secretary seeks to shift the focus away from the issue of the adequacy of the hazard assessment to the issue of the adequacy of Luna Tech's PPE. However, item 1 of citation No. 2, alleging a willful violation of § 1910.132(a), addresses this same issue. Amending item 1 of citation No. 1 to allege in the alternative that Luna Tech violated § 1910.132(d)(1)(i) would be duplicative of the alleged willful violation of § 1910.132(a). The Secretary's post-hearing motion to amend the citation is denied.

The Secretary has failed to establish that Luna Tech committed a violation of § 1910.132(d)(2). Disagreement with the conclusions reached in an employer's workplace hazard assessment is not the same as proof that the assessment did not take place. Item 1 is vacated.

## Citation No. 2

### Item 1: Alleged Willful Violation of § 1910.132(a)

The Secretary alleges that Luna Tech committed a willful violation of § 1910.132(a), which provides:

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

The citation alleges that on March 16, 2000, DeWille “was preparing an explosive mixture commonly referred to as ‘transfer comp’ without wearing protective equipment for the face, hands, arms, and upper torso.” As noted, DeWille was wearing safety glasses and long-sleeved cotton overalls at the time of the fire. Wilkins testified that DeWille and Wimbish should have been wearing gloves, face shields, and flame retardant clothing (Tr. 349).

In her post-hearing brief, the Secretary moves to amend the citation, pursuant to FRCP 15(b), to allege that “additional PPE for the head, face, neck and hands was needed and was not provided to, and required to be used by,” DeWille and Wimbish (Secretary’s brief, p. 26). The Secretary’s proposed amendment to include the head and neck as parts that should have been protected is her second attempt to shore up her case via a post-hearing motion. Given that this item is alleged as a willful violation, it would be unfair to Luna Tech to retroactively amend the specifics of the citation. Furthermore, the Secretary’s proposed amendment is superfluous. The record establishes that DeWille’s hands and face (excepting his eyes) were not protected by any PPE. Gloves and face shields were the primary pieces of PPE at issue in the hearing, although flame retardant clothing was mentioned. The original citation conforms more closely to the evidence than would an amended citation containing the addition of “head” and “neck” to the list of body parts to be protected. The Secretary’s motion is denied.

Section 1910.132(a) requires the use of PPE “wherever it is necessary by reason of hazards of processes . . . encountered in a manner capable of causing injury. . .” There is no dispute that mixing the transfer composition is a hazardous process that requires the use of appropriate PPE. The cited standard applies to the cited conditions.

The manufacture pyrotechnics is an intrinsically dangerous business. DeWille acknowledged the risks inherent in mixing transfer compositions (Exh. C-47 at p. 13):

[B]oron, bismuth trioxide, magnesium aluminum alloy. Sure. And, I can tell you, the MSDS says, for God's sake, don't ever combine any of these. But, I mean, the problem is, we combine reducing agents and oxidizers. That's the way you make explosives. That's how pyrotechnics are manufactured. And, of course, the MSDS says not to do that. Rightly so, unless that is your intent.

The Secretary met her burden to establish both that DeWille and Wimbish were exposed to a hazard of mixing the transfer composition and that Luna Tech, through owner DeWille, was aware of the hazardous conditions. The only element that Luna Tech disputes is whether the PPE used by DeWille was adequate to comply with § 1910.132(a).

DeWille had been burned on his hands several years previously while working with a match composition. He was aware of the fire and explosion hazards associated with mixing the compositions and of the vulnerability to the mixer's face and hands (Tr. 139). An explosion and multiple fires had destroyed much of Luna Tech's facility on September 2, 1999. An employee subsequently died from the injuries he sustained in the explosion, and two other employees were injured.

The record establishes that Luna Tech failed to use PPE appropriate to the hazards presented by mixing the transfer composition. DeWille left exposed most of his face and his hands, which are the parts of the body most likely to be injured while looking over and preparing the composition. DeWille knew from his own personal experience, as well as the experiences of his employees, both current and former, that burns to the face and hands were common in the event of a sudden ignition.

Luna Tech attempted to argue that the use of gloves would have hindered DeWille's manual dexterity and that it was possible that flames could shoot up under a face shield. It is noted that Luna Tech did not assert either a greater hazard or an infeasibility affirmative defense (Tr. 564). Luna Tech failed to offer any real evidence that the use of gloves and face shields would impede DeWille's work or decrease his safety. Luna Tech's comments regarding limited dexterity and flames coming under the face shield were presented as mere speculation ungrounded in fact.

The Secretary has established that Luna Tech violated § 1910.132(a). The Secretary charges that the violation is 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." *Falcon Steel Co.*, 16 BNA OSHC 1179, 1181, 1993-95 CCH OSHD ¶30,059, p. 41, 330 (No. 89-2883, 1993)(consolidated); *A.P. O'Horo Co.*, 14 BNA OSHC 2004, 2012, 1991-93 CCH OSHD ¶ 29,223, p. 39,133

(No. 85-0369, 1991). A showing of evil or malicious intent is not necessary to establish willfulness. *Anderson Excavating and Wrecking Co.*, 17 BNA OSHC 1890, 1891, n.3, 1995-97 CCH OSHD ¶ 31,228, p. 43,788, n.3 (No. 92-3684, 1997), *aff'd* 131 F.3d 1254 (8th Cir. 1997). A willful violation is differentiated from a nonwillful violation by an employer's heightened awareness of the illegality of the conduct or conditions and by a state of mind, *i.e.*, conscious disregard or plain indifference for the safety and health of employees. *General Motors Corp., Electro-Motive Div.*, 14 BNA OSHC 2064, 2068, 1991-93 CCH OSHD ¶ 29,240, p. 39,168 (No. 82-630, 1991)(consolidated). A willful violation is not justified if an employer has made a good faith effort to comply with a standard or eliminate a hazard, even though the employer's efforts were not entirely effective or complete. *L. R. Willson and Sons, Inc.*, 17 BNA OSHC 2059, 2063, 1997 CCH OSHD ¶ 31,262, p. 43,890 (No. 94-1546, 1997), *rev'd. on other grounds*, 134 F.3d 1235 (4th Cir. 1998); *Williams Enter., Inc.*, 13 BNA OSHC 1249, 1256-57, 1986-87 CCH OSHD ¶ 27,893, p. 36,589 (No. 85-355, 1987). The test of good faith for these purposes is an objective one; whether the employer's efforts were objectively reasonable even though they were not totally effective in eliminating the violative conditions. *Caterpillar, Inc. v. OSHRC*, 122 F.3d 437, 441-42 (7th Cir. 1997); *General Motors Corp., Electro-Motive Div.*, 14 BNA OSHC at 2068, 1991-93 CCH OSHD at p. 39,168; *Williams Enter., Inc.*, 13 BNA OSHC at 1256-57, 1986-87 CCH OSHD at pp. 36, 589.

*A. E. Staley Manufacturing Co.*, 19 BNA OSHC 1199, 1202 (Nos. 91-0637 & 91-0638, 2000).

As stated, approximately 6 months prior to the fire that is at issue here, half of Luna Tech's facility was destroyed in a devastating fire, which resulted in the death of an employee. DeWille has worked in the pyrotechnics manufacturing business for 20 years (Tr. 17). He is a member of the National Fire Protection Association's Technical Committee on Pyrotechnics, which promulgates NFPA 1124 (Tr. 21). Through personal experience as well as through familiarity with the industry, DeWille has a heightened awareness of the hazards of pyrotechnics manufacturing business. Only 2 weeks before the fire that gave rise to this case, the Secretary had issued to Luna Tech two citations alleging 25 violations of the Act relating to the fatal explosion that occurred in September 1999.

Given DeWille's background and Luna Tech's history, the failure to require employees to use basic PPE to protect their faces and hands constitutes a willful violation of § 1910.132(a). Luna Tech's failure to provide and require the use of gloves and face shields was not objectively reasonable. It knew that its employees were personally measuring out and adding pyrotechnic substances to the sieve shaker during the transfer composition process. It was readily apparent that if the transfer composition ignited, an employee's hands and face would be the most exposed. Luna Tech had provided Styrofoam breakaway walls for the buildings in the event of a

fire or explosion, yet it failed to require the primary defense of adequate PPE. Luna Tech demonstrated a conscious disregard for the requirements of § 1910.132(a).

**Item 2: Alleged Willful Violation of § 1910.307(b)**

The Secretary alleges that Luna Tech committed a willful violation of § 1910.307(b), which provides in pertinent part:

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

The citation alleges:

On or about March 16, 2000, the company owner was preparing an explosive mixture commonly referred to as “transfer comp” in an area containing electrical equipment where the electrical classification had not been determined and using equipment without nationally recognized testing lab (NRTL) approval for the intended use. The transfer comp is a secondary pyrotechnic composition that is used in the manufacture of electric matches. The laboratory building’s outlets and thermostat were not approved for combustible dust operations (Class II, Division 2) and electrical equipment (sieve shaker) was not approved for use in a hazardous classified location.

Prior to the hearing, the Secretary withdrew her allegation that an unapproved thermostat was located in a hazardous (classified) location. Section 1910.399 defines Class II locations as “those that are hazardous because of the presence of combustible dust.” The locations are further divided into Division 1 and 2 locations, depending upon the properties of the combustible dusts which may be present therein, and the likelihood that a flammable or combustible concentration or quantity of such dust is present. The citation refers to combustible dust operations as taking place in a Class II, Division 2, location, but Wilkins later determined that the location was more properly assessed as a Class II, Division 1, location because Luna Tech was working with electrically-conductive dust (Tr. 354). The parties litigated the issue of whether building number 8 was a Class II, Division 1, location at the hearing. Section 1910.399 defines a Class II, Division 1, location as a location:

- (a) In which combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures; or
- (b) where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitable mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, operations of protection devices, or from other causes, or
- (c) in which combustible dusts of an electrically conductive nature may be present.

While the Act does not define “dust,” the word is commonly understood to mean “fine, dry particles of matter” or “particles of matter regarded as the result of disintegration.” *American Heritage Dictionary* 431 (2d college ed. 1982). The Secretary established that all of the materials used to make the transfer composition were fine, dry particles of matter.

(a) Combustible dust

A national consensus standard, National Fire Protection Association 499, *Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas* (1977) (NFPA 499) defines “combustible dust” as:

Any finely divided solid material 420 microns or less in diameter (*i.e.*, material passing through a U. S. No. 40 Standard Sieve) that presents a fire or explosion hazard when dispersed.

Luna Tech used Standard U.S. Sieve sizes from 16 through 200 for mixing the transfer composition. The larger the number of the sieve, the smaller the openings through which materials being sieved must pass. The magnesium-aluminum alloy had been pre-screened through a U.S. No. 270 Standard Sieve (Tr. 75). The particle sizes of the transfer composition ingredients were (Exh. C-47; Tr. 75):

magnesium-aluminum alloy	55-80 microns
bismuth trioxide	2-40 microns
amorphous boron	2-4 microns

The magnesium-aluminum alloy dust that DeWille used to make the transfer composition came from a metal can in building number 8 that contained approximately a quart (300-400 grams) of magnesium-aluminum alloy, pre-screened through a U.S. 270 Standard Sieve Screen (Exh. C-47 at p. 22; Tr. 82). For each 1 kilogram batch of transfer composition, DeWille spooned 150 grams of magnesium-aluminum dust from this can into another container, then tumbled and mixed it with 100 grams of the boron dust before the mixture was put in the sieve shaker to be screened. The bismuth trioxide was added by tablespoonfuls as the two fuels were screened. DeWille added bismuth shot to the top of the screen to facilitate movement of the mixture through the screen (Exh. C-47; Tr. 164).

The process of mixing the transfer composition resulted in hazardous quantities of combustible dust being suspended in the air between the sieve screen and the pan under normal operating conditions. It is undisputed that magnesium-aluminum alloy and boron dusts were present in and around the sieve shaker (Exhs. C-15, C-47 at p. 11; Tr. 53-54). Mike Davis, a

former lab technician for Luna Tech, testified regarding the use of the old sieve shaker while mixing the transfer composition (Tr. 292):

I would describe a fine coating of particulate matter in the area, say, one or two feet around the pan of the sieve shaker that I would use. I would describe it is as similar to what happens when you sift flour through a flour sifter and try to get it only on one area. It floats.

Davis testified there was no appreciable difference between the motion and speed of the old sieve shaker and the new model that was being used at the time of DeWille's accident (Tr. 299). Davis testified that each time he used the old sieve shaker to screen the transfer composition, he noticed that the white counter top on which the sieve shaker was mounted would be covered in brown dust. The boron used in the transfer composition is brown (Tr. 307). Brenda Tabor, a Luna Tech employee who used the new sieve shaker, testified that the "finer" materials she screened (those materials capable of passing through a U.S. 50 Standard Sieve Screen) created a residue around the shaker (Tr.185, 191-192).<sup>5</sup> The Secretary has established that the transfer composition, containing combustible dusts of an electrically conductive nature, was subject to floating into areas at least 2 feet from the sieve shaker screen and pan. This process created a situation where "combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures," under definition (a) of a Class II, Division 1, location under § 1910.399.

(b) Combustible dusts of an electrically conductive nature

The phrase "combustible dusts of an electrically conductive nature" is also not defined by the Act. Under the classification system of the National Electric Code (NFPA 70, NEC), combustible dusts are grouped into categories based upon their electrical resistivity. Under the NEC classification system, Group E dusts are considered to be electrically conductive (Tr. 434). The magnesium-aluminum alloy and boron dusts used to make the transfer composition were "Group E" metal dusts according to the NEC classification system (Exh. R-5 at pp. 9, 18-19).

Luna Tech presented the testimony of Gerald Laib, a civilian research chemist for the Naval Service Warfare Center, Indianhead Division. Laib has a B. S. in physical chemistry. He had worked in the field of pyrotechnics and energetic materials for approximately 25 years at the time of the hearing (Tr. 214-215). Laib testified that the mixed transfer composition and the

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<sup>5</sup> Both parties submitted videotapes of demonstrations of W. S. Tyler Model RX-86 Sieve Shakers in use (Exhs. C-42, R-12). The amount of visible dust generated by the sieve shakers during these demonstrations is indeterminate due to the low resolution of the videotapes.

magnesium-aluminum alloy were not electrically conductive dusts. Laib based his testimony on tests he conducted solely in anticipation of testifying on behalf of Luna Tech. He conducted the tests the night before he testified. Luna Tech made no showing that the conditions under which the tests were conducted were reasonably controlled or representative of the conditions in which the transfer composition was used at the time of the accident. Laib did not document his testing methodology or his raw data (Tr. 255). Laib did not prepare his own transfer composition sample, but used samples provided to him by DeWille, who has a strong self-interest in the outcome of this case (Tr. 253).

The tests that Laib conducted did not duplicate the work DeWille was doing the day of the fire. The record establishes that many variables were present during Laib's testing, which compromise the reliability of his results. Accordingly, Laib's testimony regarding the electrical resistivity of the transfer composition is accorded no weight.

The Secretary has established that the substances comprising the transfer composition were combustible dusts and were of an electrically conductive nature within the meaning of § 1910.399. Thus, building number 8 is a Class II, Division 1, location, and the requirements of § 1910.307(b) apply to it. The sieve shaker and the building's outlets were required to be intrinsically safe, approved for Class II, Division 1, locations, or safe or for the classified location.

Neither the sieve shaker nor the outlet into which it was plugged was approved as intrinsically safe, nor were either approved for use in a Class II, Division 1, location or for the ignitable or combustible properties of the Group E dusts present (Exh. C-47; Tr. 319-320, 352-353, 380-381, 425). Wilkins testified that the type of outlet that Luna Tech was using in building number 8 was not safe for a Class II hazardous location because "it wasn't dust ignition-proof" (Tr. 368). The type of outlet Luna Tech was using was "suitable for moisture, wet locations" (Tr. 367). Wilkins testified (Tr. 368):

The flapper type valves that covered the actual opening of where the prongs go into the wall outlet . . . would prevent moisture from entering. But, in order to insert the prongs from the plug from the sieve shaker, you had to actually open those with flaps to plug the equipment in. And, then, when you unplugged it . . . you risk creating a spark when you plug and unplug equipment[.]

Joseph Pipkin is OSHA's director of the office of electrical, electronic and mechanical engineering safety standards (Tr. 408). He has over 50 years of experience in electrical design engineering (Tr. 409). Pipkin sits on committees for the National Fire Protection Association and the National Electrical Code. He has worked with the National Materials Advisory Board

(NMAB) of the National Academy of Science on its report on the classification of dust relative to electrical equipment in Class II hazardous locations (Tr. 413-415).

Pipkin examined a W. S. Tyler Model RX-86 Sieve Shaker, the same model that Luna Tech was using at the time of the accident, in June 2001 (Tr. 420). Pipkin determined that the sieve shaker would not be safe for use in a Class II, Division 1, location. He stated that there was no listing or labeling on the sieve shaker stating that it was suitable for such a location (Tr. 421-422). The sieve shaker is not dust-tight, meaning that it is not ignition-proof (Tr. 422). Pipkin identified multiple ignition sources on the sieve shaker (Exhs. C-8, C-42, C-45; Tr. 427-433). He testified (Tr. 426):

Just looking at the equipment, one could see that it's possible that dust could migrate to areas where there are exposed live parts; and, therefore, being a conductive dust, that could cause arcing which could be a source of ignition for dust which is suspended, or even ignite the dust which is layered.

...

[T]here was no sealing at all in any of the wiring involved.

The Secretary has established that Luna Tech committed a violation of § 1910.307(b). The Secretary alleges that the violation is willful.

Luna Tech was aware of the requirements of the cited standard. The Secretary had cited Luna Tech in 1986 for a violation of § 1910.307(b)(1) for failing to have approved electrical equipment in the old laboratory building (Exh. C-18 at p. 3, Tr. 127-138). She cited Luna Tech for violating § 1910.307(b)(1) just 2 weeks before the fire that gave rise to the instant case (Exh. C-17). Luna Tech's safety manual states, "Metallic or conductive dust must be prevented from entering or accumulating on or around enclosures or equipment" (Exh. C-90 at p. 24). As noted in the previous section, DeWille is a member of the National Fire Protection Associations's Technical Committee on Pyrotechnics, which promulgates NFPA 1124.

Both DeWille and Weinman were aware that the sieve shaker in building number 8 was not approved for use in a Class II location. When asked if he had made any effort to determine whether the sieve shaker was approved, DeWille replied, "To the best of my knowledge, no screen shaker has ever been made that is classified for a . . . Class II, Division 1 or 2" (Tr. 114).<sup>6</sup> The new sieve shaker was visibly different from the old one. Davis testified (Tr. 291):

The new sieve shaker was a new piece of equipment, and the design was different from the old sieve shaker. The new sieve shaker that was in the new lab building had an externally-mounted motor on top of the base of the sieve shaker platform

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<sup>6</sup> It is noted again that Luna Tech did not assert an affirmative defense of infeasibility.

sitting up next to where the screens were instead of underneath the plate and underneath the pad, and I was concerned that there might be a possibility that some of the pyrotechnic mixture I was working with could wind up inside the electric motor and accidentally ignite and cause a problem.

After the September 1999 fire destroyed the old lab, Davis had recommended to DeWille and Weinman that Luna Tech purchase a sieve shaker with the “motor which was enclosed inside of the housing and underneath the plate.” Luna Tech ignored Davis’s recommendation (Tr. 294).

The Secretary has established a willful violation of the cited standard. Luna Tech had a heightened awareness of the illegality of using unapproved, unsafe electrical equipment and outlets when preparing pyrotechnic compositions.

### **Penalty Determination**

The Commission is the final arbiter of penalties in all contested cases. In determining an appropriate penalty, the Commission is required to consider the size of the employer’s business, history of previous violations, the employer’s good faith, and the gravity of the violation. Gravity is the principal factor to be considered.

At the time of the fire, Luna Tech employed approximately 50 employees (Tr. 18). The Secretary had cited Luna Tech for multiple violations of the Act just 2 weeks prior to the fire. Because Luna Tech is found in willful violation of two OSHA standards, it is afforded no credit for good faith. The gravity of the two violations is very high. The failure to wear appropriate PPE directly resulted in DeWille’s injuries being as severe as they were. The failure to have approved or safe electrical equipment and outlets is a likely cause of the explosion and fire that injured DeWille.

Another consideration is brought to bear in this particular case. DeWille is the president and owner of Luna Tech. DeWille sustained serious injuries in the fire that gave rise to the instant citations. Any monetary penalty levied upon Luna Tech (and, by extension, on DeWille) will be in addition to a degree of penalty which DeWille’s injuries have already extracted. The undersigned finds this to be a mitigating factor upon the Secretary’s proposed penalties.

Upon consideration of these factors, it is determined that the appropriate penalty for each of the willful violations is \$25,000.00.

### **FINDINGS OF FACT AND CONCLUSIONS OF LAW**

The foregoing decision constitutes the findings of fact and conclusions of law in accordance with Federal Rule of Civil Procedure 52(a).

## ORDER

Based upon the foregoing decision, it is hereby ORDERED that:

1. Item 1 of Citation No. 1, alleging a serious violation of § 1910.132(d)(2), is vacated, and no penalty is assessed;
2. Item 1 of Citation No. 2, alleging a willful violation of § 1910.132(a), is affirmed and a penalty of \$25,000.00 is assessed; and
3. Item 2 of Citation No. 2, alleging a willful violation of § 1910.307(b), is affirmed and a penalty of \$25,000.00 is assessed.

/s/

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NANCY J. SPIES  
Judge

Date: March 25, 2002