BF Goodrich Hilton Davis, Inc.
00-1401

APPEARANCES

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Office of the Solicitor	Duvin, Cahn & Hutton	UFCW Assistant General Counsel
U. S. Department of Labor	Cleveland, Ohio	ICWUC Local 342C
Cleveland, OH	For Respondent	Akron, Ohio
For Complainant		For Employees

Before: Administrative Law Judge Ken S. Welsch

DECISION AND ORDER

BF Goodrich Hilton Davis, Inc. (BFG), manufactures pigments and dies at a plant in Cincinnati, Ohio. As part of the manufacturing process, large dryers are used to dry wet chemical compounds to a powder. When changing the chemical compounds or performing preventive maintenance, the dryers are cleaned inside in a "boilout process" by repeatedly heating a solution of corrosive soap and water. On June 12, 2000, an employee was burned over 47% of his body when he emptied the boilout from Conaform Dryer #731D. After an inspection by the Occupational Safety and Health Administration (OSHA), BFG received a serious citation on June 28, 2000. BFG timely contested the citation.

The serious citation alleges, among other violations,[1] that BFG violated 29 C.F.R. § 1910.132(a) (item 1) by failing to provide employees with personal protective equipment (PPE) to prevent thermal and chemical burns when emptying Conaform Dryer #731D during the boilout process or when dispensing soap #5143 into a bucket and emptying it into the dryer; 29 C.F.R. § 1910.132(d)(1) (item 2) by failing to make an adequate hazard assessment of the boilout process; 29 C.F.R. § 1910.133(a)(1) (item 3) by failing to ensure that employees used appropriate eye and face protection when dispensing soap #5143 into a bucket and emptying it into the dryer; 29 C.F.R. § 1910.147(c)(4)(ii) (item 4) by failing to identify on dryer #731D the pneumatic energy sources and the potential for high pressure release in its energy control procedures; and 29 C.F.R. § 1910.1200(h)(3)(iii) (item 7) by failing to ensure that employees' training included safe

[1] At the hearing, the Secretary withdrew item 5, alleged violation of 29 C.F.R. § 1910.147(d)(3), and item 6, alleged violation of 29 C.F.R. § 1910.147(d)(4)(i) (Tr. 7-8).

work practices and PPE when performing a boilout on dryer #731D. The proposed total penalty for the items at issue is $17,225.

The hearing in this case was held February 5 - 6 and March 8 - 9, 2001, in Cincinnati, Ohio. The International Chemical Workers Union Council, United Food and Commercial Workers, Local 342C, was designated party status. The parties stipulated jurisdiction and coverage (Exh. J-1; Tr. 6). The parties filed post-hearing briefs.

BFG denies the violations and asserts compliance with the standards. BFG asserts that operators of dryer #731D wear appropriate PPE as required by the Material Safety Data Sheet (MSDS) for soap #5143. BFG disputes that the mixture of soap and water constitutes a hazardous chemical. Also, BFG alleges that the accident on June 12, 2000, was unforseen.

For the reasons discussed, the alleged violation identified in item 1 is affirmed. The remaining alleged violations are vacated or withdrawn by the Secretary.

The Accident

BFG, a large corporation, operates a chemical processing plant in Cincinnati, Ohio, which manufactures color pigments and dies. The plant facilities consist of several buildings. The plant operates three shifts (Complaint and Answer; Tr. 219, 222).

In Building #41, large dryers, including dryer #731D,[2] are used to dry product into a powder (Tr. 316, 418). One employee operates the dryers per shift (Tr. 222). The #731D dryer has a capacity of 100 cubic feet (748 gallons). The dryer is heart-shaped and is loaded from the second floor of the building. After the dryer is filled with wet product and sealed, the dryer rotates on an axle. Steam heat is used to heat the jacket around the dryer, which in turn heats the product. When the drying cycle is complete, the dryer's contents are emptied through an 18-inch butterfly valve into drums on the first floor (Exhs. C-1, R-3, R-7; Tr. 221, 410, 417-419).

The area on the first floor where the dryer's contents are emptied is surrounded by a fence or cage to prevent employees from entering the area while the dryer rotates (Tr. 652-653). To

[2]In addition to the #731D dryer, operators are responsible for the #718 dryer and #720 dryer (Tr. 239, 406, 454). All dryers perform the same function, *i.e.*, drying product by removing methanol (Tr. 413, 655).

empty the contents of the #731D dryer,[3] the operator enters the cage to air activate an 18-inch butterfly valve on the bottom of the dryer. The operator connects an air line to the butterfly valve. The air line valve is mounted on a wall approximately 5 to 10 feet from the butterfly valve. When air is applied, the butterfly valve opens and the dryer's contents are discharged. When discharging the contents of #731D dryer, the employee stands inside the cage, 3 to 10 feet from the butterfly valve (Exh. C-1; Tr. 259-260, 315, 420-421, 517-518, 587).

When performing preventive maintenance or changing product, the dryers are first cleaned inside through a "boilout process." The boilout decontaminates the inside of the dryer (Tr. 48-49, 276). To initiate a boilout, the dryer is rotated so that the 18-inch butterfly valve faces up toward the second floor. The operator removes the "solids bowl" and opens the vent line. He then takes a 5-gallon bucket to the soap #5143 storage tank on the first floor and fills the bucket (Tr. 181, 243, 245, 365, 413-414, 455, 463, 487-488, 545).

The MSDS for soap #5143 identifies the soap as corrosive with a pH of 14 (Exh. C-2). The MSDS specifies the use of safety glasses and neoprene gloves. There is no dispute that operators wore safety glasses and neoprene gloves while handling soap #5143 (Exh. J-1; Tr. 165).

After filling the bucket with soap #5143, the operator takes the bucket to the second floor and empties the soap through the open butterfly valve into the dryer. The dryer is also filled with approximately 250 gallons of water. The butterfly valve is then closed, steam heat is applied to the dryer's jacket and the dryer is rotated for 45 minutes to an hour. The temperature inside the dryer reaches as high as 116 degrees Celsius(C)[4] (Exh. R-4; Tr. 45, 72-73, 243, 464).

After completing the heat cycle, the dryer is rotated so that the butterfly valve is pointed down towards the first floor. The air line is attached to the butterfly valve and the soap and water mixture is emptied into the drains in the floor (Tr. 134, 259, 374, 656). The boilout process is repeated four times. The fourth boilout is generally only water (Tr. 378, 381).

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[3]Unlike the #731D dryer, the other dryers (# 718 and #720) are "more automated and they're controlled from a panel board opening the butterfly valve" (Tr. 406). The operator does not need to physically contact the butterfly valve. The operator stands at a panel board outside the cage, approximately 25 feet from the discharge area (Tr. 257-258, 406, 517-518, 656).

[4]BFG keeps a temperature graph at the dryer (Exh. R-4). Water boils at 100 degrees C (212 degrees Fahrenheit) (Exh. J-1). The boiling point of soap #5143 is greater than 100 degrees C (Exh. C-2; Exh. J-1).

On June 12, 2000, employees performed four boilouts on the #731D dryer as part of preventive maintenance. The first boilout started at the end of the first shift by operator Fredrick Marshall at approximately 2:30 p.m. This was Marshall's first boilout on the #731D dryer, although he had performed boilouts on other dryers. When he completed his shift at 3:00 p.m., Marshall had not emptied the contents from the first boilout (Exh. J-1; Tr. 242, 253-254, 256, 819).

The second shift operator Tom Theademan emptied the first boilout, completed the second and third boilouts, and filled the dryer for the fourth boilout when his shift ended at 11:00 p.m. When the boilouts were emptied, the temperature of the contents was 96 degrees C for the first boilout, 85 degrees C for the second boilout, and 80 degrees C for the third boilout (Exh. J-1; Tr. 368, 374, 376, 378, 425-426).

When third shift operator Roy Morgan started his shift, the temperature of the fourth boilout was approximately 105 degrees C. At 11:30 p.m., Morgan emptied the fourth boilout. The temperature of the contents was approximately 116 degrees C (240.8 degrees Fahrenheit). After connecting the air line to the butterfly valve and stepping onto a stool inside the cage, Morgan remembers only screaming for help. He received burns on 47% of his body when the boilout's contents splashed on him under high pressure. Morgan was unconscious for eight days. Although still employed by BFG, Morgan has not returned to work (Exhs. J-1, R-4, U-4; Tr. 454, 456, 478).

On June 16, 2000, OSHA industrial hygienist (IH) Deborah Wallace and supervisor Dick Gilgrist initiated a formal complaint inspection of BFG's boilout process on the #731D dryer (Tr. 35). Wallace interviewed employees and supervisors. She personally did not observe the boilout process. Also, there was no analysis of the soap and water solution inside the dryer during a boilout (Tr. 223-224). Based on OSHA's inspection, a serious citation was issued to BFG.

Discussion

The Secretary has the burden of proving a violation.

> 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).

BFG does not dispute the application of the standards for PPE, lockout and hazard communication to its boilout process on the #731D dryer. BFG asserts that it complied with the cited standards. Also, BFG does not deny that it knew of the boilout process and that its operators were exposed employees. BFG does not assert employee misconduct as a defense.

Item 1 - Alleged violation of § 1910.132(a)

The citation alleges that BFG failed to ensure PPE was used to protect operators from thermal and chemical burns when transporting the 5-gallon bucket of soap #5143 to the #731D dryer or when emptying the contents of the dryer after the boilout. 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 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.

Section 1910.132(a) requires PPE when an employer has actual knowledge of a hazard requiring the use of PPE or a reasonable person familiar with the situation, including any facts unique to the particular industry, would recognize a hazard warranting the use of such PPE. *Armour Food Co.*, 14 BNA OSHC 1817, 1820 (No 86-247, 1990). The standard's focus is on the recognition of a hazard, not the need for particular PPE. *Lukens Steel Co.*, 10 BNA OSHC 1115, 1123 (No. 76-1053, 1981).

The Secretary argues that the PPE (rubber gloves, safety glasses) worn by employees was inadequate for dispensing soap #5143 into the dryer and when emptying the dryer's contents after the boilout. The alleged hazard involves thermal (boiling water) and chemical (corrosive soap)

burns caused by possible splashing. On June 12, 2000, third shift operator Roy Morgan suffered second and third degree burns when the contents splashed on him while emptying the boilout (Tr. 478). His burns were on his back, arms, buttocks and legs (Tr. 478). The Secretary cites *Gulf Oil Co.-U.S.*, 10 BNA OSHC 1025, 1026 (No. 76-6736B, 1981) (affirming a § 1910.132(a) violation by requiring face shields and slicker suits to protect employees from splashing while transferring sulfuric acid from a supply tank to a storage tank. The Commission rejected the employer's argument that the activities did not require more protective equipment than goggles and gloves).

Dispensing Soap #5143

To initiate the boilout, employees dispensed soap #5143 from a large plastic holding tank on the first floor into a 5-gallon bucket, carried the bucket to the second floor, and emptied the soap into the dryer (Tr. 245). First shift operator Marshall stated that after obtaining the soap, he carried the bucket approximately 50 yards from the tank to the dryer (Tr. 247-248). Second shift operator Theademan testified that he put a lid on the bucket, put the bucket on an elevator, and then carried the bucket approximately 50 feet to the dryer (Tr. 370). Third shift operator Morgan testified that he carried the bucket of soap approximately 40 feet to an elevator and another 40 feet from the elevator to the dryer (Tr. 463-464).

Soap #5143, used in the boilout, is a "thin liquid" with a pH level of 14. The MSDS describes the soap as corrosive to the eyes and skin (Exh. C-2). The MSDS identifies safety glasses and neoprene gloves as appropriate PPE. The recommended first aid measures for physical contact with the soap include dilution or flushing with water.

BFG agrees that soap #5143 is classified as a hazardous chemical (Tr. 22, 848). BFG's safety and health manager Bryan Haywood describes the soap as a caustic and recognizes that it could cause chemical burns (Tr. 849-850). Second shift operator Theademan knew that the soap was "highly caustic" (Tr. 382). Chemical operator Carl Hager testified to an incident after June 12, 2000, when an employee while cleaning the floor received blisters on his feet when soap #5143 splashed into his boots (Tr. 538).

The Secretary acknowledges that BFG required employees to wear safety glasses and rubber gloves when dispensing the soap to the dryer (Exh. J-1). The Secretary argues that the

employees should have additionally worn face shields and rubber aprons when dispensing the bucket of soap #5143 to dryer #731D (Secretary's Brief, p.12). CO Wallace testified that the MSDS for soap #5143 is contradictory because, in her opinion, compliance with the MSDS does not fully protect an employee. The soap could still get on the employee's skin or eyes despite the glasses and gloves (Tr. 110-111, 120-122).

The record in this case fails to demonstrate that dispensing and carrying the soap in a bucket requires PPE beyond the safety glasses and rubber gloves recommended by the MSDS. There is no showing of a splash hazard in dispensing the soap from the tank, carrying the soap to the dryer, or emptying the soap into the dryer. A splash hazard may not be assumed. No employees testified to any incidents of splashing. One employee (Theademan) testified that a lid was placed on the bucket (Tr. 370). It is not shown that employees were exposed to reasonable probability of injury that could be prevented by wearing the additional PPE. *Atlantic Battery Co*., 16 BNA OSHC at 2154. The Secretary must show more than a possibility of a hazard, she must prove a significant risk of harm due to splashing, requiring PPE. *Anoplate Corp.*, 12 BNA OSHC 1678, 1681-1682 (No. 80-4109, 1986).

The MSDS recommends only safety glasses and neoprene gloves for eye and skin protection (Exh. C-2). The employees wore the MSDS recommended PPE. The Secretary did not show that the operators' handling of the soap was beyond or contrary to the handling contemplated by the MSDS. The potential splash hazard described by the Secretary is the type of splash hazard contemplated by the soap manufacturer's MSDS in recommending safety glasses and rubber gloves. IH Wallace's testimony regarding the MSDS is not given weight. She did not contact the soap manufacturer. She never observed employees dispensing the soap to the dryer. The rubber gloves and safety glasses as required by the MSDS were not shown to be inadequate.

There is no evidence that employees had previously been injured while dispensing or carrying the soap to the dryer. The absence of injuries over the approximate 9 years of performing boilouts is some evidence that the additional PPE recommended by the Secretary is not required. *ConAgra Flour Milling Co*., 16 BNA OSHC 1137, 1142 (No. 88-1250, 1993). The burn injuries received by Morgan on June 12, 2000, were not from carrying the soap. The other

incident after Morgan's accident involved the soap splashing into an employee's shoes while he was cleaning the floor.

Emptying the Boilout

After completing the boilout, an employee stood within 10 feet of the 18-inch butterfly valve when the contents of the dryer (approximately 5 gallons of soap #5143 and 250 gallons of water) were emptied onto the floor (Tr. 46, 260, 518-519). The employee was inside the cage around dryer #731D. BFG's Department Operating Procedure (DOP) for dryer "Cleanout Procedures" dated 1993, prepared by Hilton Davis Chemical prior to its merger with BFG, instructed employees to cool the boilout contents to 50 degrees C. It also states "[S]lowly and carefully drain the dryer to the sewer. Keep clear of the draining water and its path to prevent from being splashed by the hot boilout" (Exh. C-6).

Despite the DOP, employees' testimony and the BFG temperature graph maintained on the dryer shows that the contents were emptied at temperatures higher than 50 degrees C. On June 12, 2000, the contents of the four boilouts were emptied at temperatures between 80 and 116 degrees C (Exh. R-4; Tr. 374, 376, 378, 381, 391, 466).

When emptying the boilout, the parties stipulated that employees at a minimum wore cotton uniforms, safety glasses, safety shoes and hard hats (Exh. J-1). Additionally, employees testified that they wore rubber gloves. The Secretary argues that the employees should have also worn face shields and rubber aprons when emptying the boilout from dryer #731D (Secretary's Brief, p.12).

The record establishes the need for additional PPE when emptying the boilout contents. Morgan testified that he previously had emptied the dryer at temperatures in excess of 100 degrees C, which is above the boiling point. Morgan's testimony was not contradicted. Emptying boiling water is a hazard. BFG should have known of the hazard. Temperature graphs from the boilouts were available, and a supervisor was present. Section 1910.132(a) requires appropriate PPE for the hazard. Safety glasses and rubber gloves would not protect exposed skin from boiling water, particularly from unexpected pressurization[5] (BFG Brief, p. 10).

[5]BFG believes that the vent which prevents pressurization became clogged (Tr. 324-325).

A serious violation of § 1910.132(a) is established. In determining whether a violation is serious, the issue is not whether an accident is likely to occur; it is rather, whether the result would likely be death or serious harm if an accident should occur. *Whiting-Turner Contracting Co.,* 13 BNA OSHC 2155, 2157 (No. 87-1238, 1989). The burn injuries to Morgan show the serious nature of the condition.

Item 2 - Alleged Violation of § 1910.132(d)(1)

The citation alleges that the hazard assessment was not adequate to protect employees from burns during the boilout procedure on the #731D dryer. Section 1910.132(d)(1) provides, in part:

> The employer shall assess the workplace to determine if hazards are present, or likely to be present, which necessitate the use of personal protective equipment (PPE).

As stated, the PPE requirement of § 1910.132(a) applies whenever it is necessary by the hazards of processes encountered in the workplace capable of causing injury. Section 1910.132(d)(1) requires an employer to assess the workplace to determine if such hazards are present which necessitate the use of PPE. *Topco*, *Inc.,* 18 BNA OSHC 1746, 1750 (No. 97-0299, 1999) (ALJ). The hazard assessment identifies the specific job task hazards which require appropriate PPE.

There is no dispute that BFG had made an assessment of the boilout process (Tr. 165). BFG's Department Operating Procedure (DOP) for dryer "Cleanout Procedures" is a hazard assessment (Exh. C-6).

The issue is whether this assessment was adequate. IH Wallace testified that the BFG hazard assessment was inadequate because it only required employees to wear hard hats, safety glasses, and steel toed shoes during boilout (Exh. J-1). Employees testified that they wear rubber gloves. The MSDS for soap #5143 recommends rubber gloves and safety glasses as appropriate PPE. The Secretary argues that employees should have additionally worn face shields and rubber aprons.

BFG's written boilout procedure (DOP) specifically applies to the #731D dryer. It is a hazard assessment. The procedure advises operators to position the butterfly valve away from them and to cool the dryer contents to below 50 degrees C. The DOP also recognizes that the

dryer could become pressurized during a boilout if the vent was not open or the vent line was plugged. If done in accordance with the DOP, there is no showing of a hazard requiring PPE in addition to the safety glasses and rubber gloves required by the soap manufacturer.

The Secretary argues that employees were not trained and did not follow the DOP. However, the lack of safety training or the failure by operators to follow the written procedure does not establish the lack of a hazard assessment or that the assessment was inadequate. The Secretary concedes that a hazard assessment was made.

The Secretary's complaint involves the adequacy of the PPE, not the lack of a hazard assessment. The citation was issued because employees were not wearing the PPE that the Secretary believed should be worn. The Secretary's disagreement with the result of an employer's hazard assessment is not a basis for a finding that no assessment was conducted. *Drexel Chemical Company*, 17 BNA OSHC 1908, 1910 (No. 94-1460, 1997) (deficiencies in written confined space program do not establish failure to conduct initial evaluation). According to the DOP, employees were instructed to cool the boilout to 50 degrees C and direct the contents away from their position. If followed, there is no evidence of a hazard requiring additional PPE.

A violation of § 1910.132(d) is not established.

Item 3 - Alleged Violation of § 1910.133(a)(1)

The citation alleges that BFG failed to ensure that employees used appropriate eye or face protection when dispensing the soap #5143 into a bucket and emptying the bucket into the #731D dryer.[6] Section 1910.133(a)(1) provides:

> The employer shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

The standard requires PPE for the eyes and face when there is a reasonable probability of injury that could be prevented. BFG agrees that the soap #5143 is a hazardous chemical (Tr. 22,

[6]This citation item does not allege a hazard when emptying the contents of the dryer. If it did, the record fails to show that the dryer contents of 250 gallons of water and 5 gallons of soap constituted "acids or caustic liquids" as required by § 1910.133(a)(1). No analysis was made of the boilout contents.

848). The MSDS shows that the soap is corrosive and has a pH of 14 (Exh. C-2). Safety manager Haywood agrees that the soap can cause chemical burns (Tr. 849-850).

The record, however, fails to establish a violation. Although soap #5143 is caustic, employees wore safety glasses and rubber gloves as required by the soap's MSDS. There is no showing that an operator was ever splashed with soap #5143 when dispensing it to the dryer. After the bucket is filled, a lid is placed on the bucket. During this dispensing of the soap, splashing on the face or eyes is not reasonably anticipated. The record fails to show that there was a reasonable probability of injury to eyes or face when only safety glasses are used. BFG's compliance with the MSDS's PPE recommendations complies with the PPE requirements of § 1910.133(a)(1). The record does not disclose previous injuries or near misses of injury to eyes or face from handling soap #5143. The Secretary's burden includes showing a significant risk of harm or reasonable probability of injury to eyes and face. *Atlantic Battery Co.*, *supra*, at 2153. Also, the cited standard duplicates the violation of § 1910.132(a) (item 1).

A violation of § 1910.133(a)(1) is not established.

Item 4 - Alleged Violation of § 1910.147(c)(4)(ii)

The citation alleges that BFG's energy control procedures did not identify pneumatic energy sources and the potential for high pressure release from dryer #731D. Section 1910.147(c)(4)(ii) provides, in part:

> The [energy control] procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance, including, but not limited to, the following:
>
> (A) A specific statement of the intended use of the procedure;
> (B) Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;
> (C) Specific procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the responsibility for them; and
> (D) Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

The energy control procedures required under § 1910.147(c)(4) as part of OSHA's lockout/tagout standards are to be developed and utilized by employers for the control of "potentially hazardous energy when employees are engaged" in servicing and maintenance activities. The purpose of an energy control procedure is:

> to ensure that before any employee performs any servicing or 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. *See* § 1910.147(c).

The lockout/tagout standards establish "minimum performance requirements for the control of such hazardous energy." *See* § 1910.147(a). Since the lockout procedure is to guide an employee through the lockout process, general, non-machine specific procedures are unacceptable. *Drexel Chemical Co., supra,* at 1913.

There is no dispute that the dryer operator is within 10 feet of the butterfly valve on the #731D dryer when the contents of the boilout are discharged onto the floor. Morgan was badly burned from the splashing contents when he opened the valve. The Secretary asserts that BFG's lockout program fails to identify the pneumatic energy source (air to activate the dryer's butterfly valve) or the stored energy source (pressurization inside the dryer) as sources of unexpected energy (Tr. 702-703, 706, 727). The Secretary's expert witness James Washam identified three sources of energy during a boilout in the dryer: electrical, pneumatic, and stored (Tr. 714, 797).

BFG argues that the § 1910.147 lockout standards do not apply to the #731D dryer's boilout process (Exh. R-6). BFG initiates lockout procedures only after the boilout is completed and employees enter the dryer to perform maintenance work inside the dryer. Safety manager Haywood characterized the boilout as "preparatory work, getting ready to get the equipment to zero energy, decontaminating the equipment of any stored or contamination type energy" (Tr. 815). He considered the boilout analogous to "flushing" or "purging and recovery" of the dryer prior to performing a maintenance operation (Tr. 815). According to BFG, the maintenance on dryer #731D was performed on June 13 after the boilout was completed (Tr. 862-863).

BFG's written lockout procedure uses a permit lockout system (Exhs. C-10, R-2). Employees lock out the electrical energy source to the #731D dryer prior to emptying the dryer to prevent the dryer from engaging while the operator is inside the cage (Tr. 330-332, 662-663,

704). The purpose of the boilout is to clean the inside of the dryer. "Cleaning" is a specific activity within the definition of "servicing and/or maintenance." *See* § 1910.147(b). Also, the standard applies when service and maintenance requires an employee to place any part of his body "where an associated danger zone exists during a machine operating cycle." *See* § 1910.147(a)(2)(ii)(B). The dryer operator is inside the protective cage in order to engage the butterfly valve. Morgan was inside the cage standing on a stool adjacent to the dryer when the accident occurred (Tr. 505-506). He was less than 10 feet from the discharge (Tr. 518-519). The lockout standards at § 1910.147 apply to BFG's boilout process on the #731D dryer.

An energy source can be "any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy." *See* § 1910.147(b).[7] The issue is whether BFG's lockout process involves pneumatic or stored energy sources that need to be locked out (Tr. 793).

Pneumatic Energy

An air line triggers the butterfly valve to open. The Secretary argues that the air line to the butterfly valve was a source of hazardous pneumatic energy. However, the Secretary's expert Washam agreed that "the pneumatic source isn't the hazard you're trying to deal with" (Tr. 801). Rather, the air to the valve controls whatever energy may be within the dryer (Tr. 800).

The air line used to activate the butterfly valve is not the source of hazardous energy. The air is merely the means by which the contents of the dryer are emptied. The use of the air line involves intentional actions, not unexpected energy. There is no opportunity shown for unexpected release of pneumatic energy. *General Motors Corp., Delco Chassis Div.*, 17 BNA OSHC 1217, 1219 (Nos. 91-2973, 91-3116, 91-3117, 1995), *aff'd.* 17 BNA OSHC 1673 (6th Cir. 1996)(standard inapplicable when there is sufficient notice of energization). The activation of air was not an unexpected release of energy which required locking out. The lockout standard does not apply to all energy sources, only hazardous energy. The butterfly valve has to be opened to allow the discharge (Tr. 281, 586). Air was not the source of hazardous energy.

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[7]BFG does not assert entitlement to the exceptions to the lockout requirements at § 1910.147, nor do they apply. *Drexel Chemical Co., supra,* at 1913-1914 (the exception in § 1910.147 did not apply where *inter alia* there was a potential for stored energy and not all equipment had a single energy source).

Stored Energy

The accident on June 12, 2000, may have resulted from a high pressure release of the contents of the boilout. BFG speculates that Morgan's injuries resulted from the unexpected pressurization when the vent which prevents pressurization became clogged (BFG Brief, p. 10; Tr. 324-325). The boilout contents at the time of Morgan's activation of the butterfly valve was 116 degrees C. He was inside the cage standing on a stool adjacent to the dryer (Tr. 505-506). The record fails to show previous incidents of dryer pressurization during a boilout[8] (Tr. 821-822).

BFG's DOP Cleanout Procedure instructs employees to open the vent on the dryer to avoid pressurization, and cool the dryer to 50 degrees C (Exh. C-6, §§1.15, 1.17, 1.23). The procedure recognizes the potential for pressurization during a boilout and outlines the rules and techniques to use to control stored energy. Safety manager Haywood testified that there was no potential for pressurization if the DOP procedures for clearing the vent and cooling the boilout to 50 degrees C before emptying are followed (Tr. 822). His testimony was uncontradicted.

BFG was cited for not addressing the potential for stored energy. It was not cited for lack of employee training or not complying with its procedures. The potential for stored energy is addressed in BFG's energy control procedures.

A violation of § 1910.147(c)(4)(ii) is not established.

Item 7 - Alleged Violation of § 1910.1200(h)(3)(iii)

The citation alleges that BFG failed to ensure that employees' training include the safe work practices and PPE to be used when performing a boilout on dryer #731D. Section 1910.1200(h)(3)(iii) provides that employee training include:

> (iii) The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

[8]Maintenance mechanic Towner testified that pressure build-ups have occurred in the #731D dryer during production and at least one time prior to the June 12 accident during a boilout (Tr. 978-979).

The purpose of the hazard communication standard is to ensure that information concerning chemical hazards is transmitted to employees through a comprehensive program. *See* § 1910.1200(a). The standard "applies to any chemical which is known to be present in the workplace in such matter that employees may be exposed under normal conditions of use or in a foreseeable emergency." *See* § 1910.1200(b)(2). An employer's training must include the measures an employee takes to protect himself from the physical and health exposure to hazardous chemicals in the workplace. *ARA Living Centers of Texas, Inc.*, 15 BNA OSHC 1417, 1418 (No. 89-1894, 1991).

The boilout process on dryer #731D involves a mixture of water and soap #5143 (Exh. J-1). A "chemical" is "any element, chemical compound or mixture of elements and/or compounds." *See* § 1910.1200(c). Both water and soap are chemicals. A hazardous chemical, however, is "any chemical which is a physical or a health hazard." It is undisputed that the soap #5143 is a hazardous chemical (Tr. 22, 848).

The issue is whether the mixture of soap and water in the boilout constitutes a hazardous chemical. BFG argues that the contents of a boilout do not constitute a hazardous chemical because the soap is diluted by 250 gallons of water.

Unlike the hazard determinations required by OSHA of chemical manufacturers and importers under § 1910.1200(d)(1), employers are not required to make such determinations unless they decide not to rely on the evaluation performed by the chemical manufacturer or importer. *See* § 1910.1200(d)(1). Neither the Secretary nor BFG have tested or analyzed the boilout contents (Tr. 143).

OSHA defines a mixture as "any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction." *See* § 1910.1200(c). When a mixture is involved, and an employer has not tested it to determine if it is a hazard, the "mixture shall be assumed to present the same health hazards as do the components which comprise one percent (by weight or volume) or greater of the mixture. . . ." *See* § 1910.1200(d)(5)(ii).

Soap #5143 is a mixture, according to the MSDS, containing potassium hydroxide, proprietary surfactant blend, sodium hydroxide and water (Exh. C-2). Because potassium hydroxide and sodium hydroxide constitute as much as 5% of the soap, soap #5143 is admittedly

a hazardous chemical (BFG Brief, p. 19; Tr. 22, 848). It has a pH level of 14 and is corrosive to the skin and eyes (Exh. C-2). It admittedly can cause chemical burns (Tr. 849-850).

During a normal boilout, the dryer contains approximately 250 gallons of water and 5 gallons of soap #5143 (Exh. J-1;Tr. 365, 369, 375). The Secretary argues that the boilout mixture was comprised of 2% (5/255) of soap and thus, a hazardous chemical requiring employee training under § 1910.1200(h)(3)(iii) (Tr. 72, 143).

The record, however, fails to establish that the hazardous components of a boilout comprised 1% or more of the boilout mixture. The potassium hydroxide and sodium hydroxide, the hazardous components within the soap, are at most only 5% of the soap. More than 90% of the soap is water. The boilout contained not more than 5 gallons of soap to which approximately 250 gallons of water was added. The boilout mixture contained at most 0.1% sodium hydroxide and 0.1% potassium hydroxide (Tr. 151). Therefore, the boilout mixture does not constitute a hazardous chemical.

The Secretary's interpretation is unreasonable. There is no dispute that a mixture containing 0.5% sodium hydroxide and 99.5% water is not a hazardous chemical (Tr. 155). IH Wallace agreed that there is only 0.1% of potassium hydroxide and sodium hydroxide in 5 gallons of soap #5143 and 250 gallons of water (Tr. 150-151). In drafting an MSDS for soap #5143 and water mixture, the MSDS would not list "soap #5143" as the hazardous ingredient. An MSDS identifies only the chemical and common names of all ingredients which comprise 1% or greater of the composition. *See* § 1910.1200(g)(2)(i)(C)(1). The MSDS would not need to list any chemicals if they comprise less than 1% of the mixture. Under the Secretary's interpretation, two identical mixtures would be treated differently if one was created by adding floor soap while the other was created by adding sodium hydroxide and potassium hydroxide to water.

The record also fails to show that employees were not trained in appropriate PPE for handling corrosives (Tr. 184-185). The hazard communication standard requires an employer to advise employees of the precautions to prevent exposure to hazardous chemicals. The MSDS for soap requires safety glasses and rubber gloves. Employees wore safety glasses and rubber gloves.

A violation of § 1910.1200(h)(3)(iii) is not established.

Penalty Consideration

The Commission is the final arbiter of penalties in 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, which is the principal factor considered, depends upon the number of employees exposed, the duration of the exposure, the precautions taken against injury and the likelihood that an injury would result. *J. A. Jones Construction Co.,* 15 BNA OSHC 2201, 2214 (No. 87-2059, 1993).

BFG is a large employer and not entitled to credit for size. Also, BFG is not given credit for history because it received serious citations in the preceding three years (Exh. C-7; Tr. 98). BFG is given credit for good faith based on having good safety programs.

A penalty of $2,000 is reasonable for violation of § 1910.132(a) (item 1). Appropriate PPE was not addressed by BFG when dispensing the boiling contents of a boilout. The uncontradicted testimony of Morgan shows that he regularly emptied the boilout at temperatures above 100 degrees C. He stood within 10 feet of the boiling contents emptying onto the floor. Other employees also did not comply with the DOP.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

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

ORDER

Based upon the foregoing decision, it is ORDERED that:

1. Item 1, alleged violation of § 1910.132(a), is affirmed as serious and a penalty of $2,000 is assessed.
2. Item 2, alleged violation of § 1910.132(d)(1), is vacated.
3. Item 3, alleged violation of § 1910.133(a)(1), is vacated.
4. Item 4, alleged violation of § 1910.147(c)(4)(ii), is vacated.
5. Item 5, alleged violation of § 1910.147(d)(3), is withdrawn by the Secretary.

6. Item 6, alleged violation of § 1910.147(d)(4)(i), is withdrawn by the Secretary.

7. Item 7, alleged violation of § 1910.1200(h)(3)(iii), is vacated.

/S/
KEN S. WELSCH
Judge

Date: November 26, 2001