

**STATE OF ALASKA
DEPARTMENT OF LABOR**

**OCCUPATIONAL SAFETY AND HEALTH REVIEW BOARD
P.O. BOX 21149
JUNEAU, AK 99802**

STATE OF ALASKA, DEPARTMENT OF)	
LABOR AND WORKFORCE DEVELOPMENT,)	
DIVISION OF LABOR STANDARDS AND)	
SAFETY, OCCUPATIONAL SAFETY AND)	
HEALTH SECTION,)	
)	
Complainant,)	Docket No. 00-2150
)	Inspection No. 301270229
v.)	
)	
ENERGY RECOVERY SERVICES, INC.,)	
)	
Contestant.)	
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DECISION AND ORDER

I. INTRODUCTION

This case arises from a fatal industrial accident on February 18, 2000, at the workplace of Energy Recovery Services, Inc. (ERSI) in Anchorage, Alaska. After investigating the accident, the State of Alaska, Department of Labor and Workforce Development (Department) issued a citation to ERSI alleging violations of occupational safety and health standards and assessing total monetary penalties in the amount of \$71,400.

ERSI contested the Department's citation and penalties. Prior to a Board hearing on the contested citation, the Department and ERSI entered into a partial settlement agreement

resolving Items 5 through 19 in the citation. The Board subsequently approved the partial settlement agreement. As a result, only Items 1, 2, 3a, 3b, 4a, 4b and 4c of the citation remain in contest.

Item 1 alleges a violation of 29 CFR 1910.1200(d)(5)(iii) for failure to make a hazard determination regarding mixtures of chemicals used in the workplace. This item was classified as a serious violation with a proposed penalty of \$4,200.

Item 2 alleges a violation of 29 CFR 1910.252(a)(2)(vi)(C) for welding in the presence of explosive atmospheres. This item was classified as a serious violation with a proposed penalty of \$4,200.

Item 3a alleges a violation of 29 CFR 1910.252(a)(3)(ii) for failure to vent or purge a tank prior to welding. Item 3b alleges a violation of 29 CFR 1910.106(h)(7)(i)(a) for failure to take precautions to prevent the ignition of flammable vapors. Items 3a and 3b were grouped into a single serious violation with a proposed penalty of \$4,200.

Item 4a alleges a violation of 29 CFR 1910.106(h)(7)(ii)(b) for failure to provide a responsible individual to supervise welding work and make sure safe work procedures were followed. Item 4b alleges a violation of 29 CFR 1910.252(a)(2)(iv) for failure to conduct an inspection of the work area by the individual responsible for authorizing welding operations. Item 4c alleges a violation of 29 CFR 1910.252(a)(2)(xiv) for failure of the supervisor to secure authorization for welding operations from the designated management representative. Items 4a, 4b and 4c were grouped into a single serious violation with a proposed penalty of \$4,200.

The total penalty amount for Items 1 through 4 is \$16,800.

A hearing was held before the Board on August 28-30, 2001, in Anchorage. The Department was represented by Assistant Attorney General Robert A. Royce. ERSI was represented by James K. Wilkens of Bliss, Wilkens & Clayton. At the outset of the hearing, ERSI confirmed that it had withdrawn its employee misconduct defense. *See* Withdrawal of Employee Misconduct Defense dated August 20, 2001 (*see also* Tr. at 4). During the hearing, both parties presented witness testimony and documentary evidence. Following the hearing, the parties submitted posthearing briefs. Upon consideration of the evidence and arguments of the parties, the Board makes the following findings of fact, conclusions of law, and order in this matter.

II. FINDINGS OF FACT

1. On February 18, 2000, a tank explosion occurred at ERSI's plant at 2020 Viking Drive in Anchorage, Alaska. (Tr. 94-96.) As a result of the explosion, one of ERSI's employees, Dale Stetler, was killed.¹ (Tr. 96.) Another ERSI employee, Dave Olson, was injured. (Tr. 49.)

¹

At the hearing ERSI did not dispute that Stetler was an employee, and we find no evidence establishing otherwise. After the posthearing briefing was completed, ERSI filed an emergency request to defer ruling and to reopen the case for the limited purpose of discovery into the issue of whether Stetler was an independent contractor rather than an employee. ERSI's request was denied. Regardless whether Stetler was an employee or an independent contractor, ERSI could still be held liable for occupational safety and health violations on the basis of its control over the workplace and the exposure of other ERSI employees such as Dave Olson. *See generally* Mark A. Rothstein, *Occupational Safety and Health Law*, 161-69 (4th ed. 1998).

2. ERSI is a small family-run business, owned and operated by Blake Hillis and his wife Kathy Hillis. ERSI is in the business of recycling used oil and petroleum products. The company collects waste oil and other petroleum products which are treated at its plant to remove contaminants and then sold as industrial fuel. ERSI was established in 1994 and built and occupied a new facility on Viking Drive in 1999. (Tr. 289-92.)

3. ERSI's plant on Viking Drive contains two large tanks for holding waste oil (referred to as O-1 and O-2) and two large tanks for holding contaminated wastewater (referred to as W-1 and W-2). (Exhs. 1, A and B.) In ERSI's treatment process, used oil and other waste products are first treated in the oil tanks using a demulsifier known as ECO 91 to separate water and contaminants from the used oil. The contaminated water is then transferred to the water tanks where it is further treated with another chemical known as ECA 1350 which binds hydrocarbons together so that they combine and float to the top of the water where they can be removed. (Tr. 299-312.)

4. Next to tank W-1 is a smaller tank for holding ethylene glycol (antifreeze). (Exhs. 1, A and B.) The ethylene glycol tank was vented with a four-inch pipe fitted into the top of W-1, but the connection between the vent pipe and W-1 was merely a friction fit and was not fully sealed or welded. (Tr. 215, 396.)

5. Prior to the tank explosion in February 2000, ERSI had several full-time employees. Blake Hillis managed ERSI's business operations and supervised all of the employees. (Tr. 360.) Kathy Hillis worked as the company's bookkeeper. (Tr. 292.) Adam Naquin began working for ERSI in 1995 as a truck driver and general laborer, and was later

promoted to shop supervisor, overseeing the normal day-to-day operations of the plant. (Tr. 292-93, 447-48.)

6. Dale Stetler was hired by Hillis in July 1999 to assist in building ERSI's new facility. Hillis and Stetler had previously worked together at Alaska Pollution Control, another oil recycling business. Hillis hired Stetler primarily because of Stetler's experience as a welder. (Tr. 294-95; Ex. E.) Stetler was described by several witnesses as a professional, meticulous, an expert and a perfectionist in his capacity as a welder. (Tr. 37, 322-23, 449.)

7. Stetler worked full-time for ERSI for approximately six months, installing the tanks and related piping inside the new facility. (Tr. 295-96.) In January 2000, Stetler had the opportunity to work briefly on the North Slope. While Stetler was gone, Hillis hired another welder, Todd Bauer, to continue work on the installation of the tanks. (Tr. 296-97.) Among other things, Hillis had Bauer cut a hole in the top of W-1 with a Saws-All, a metal reciprocating saw, in order to connect the four-inch pipe from the glycol tank to W-1. (Tr. 359, 423.) Stetler finished working on the Slope in early February 2000 and was rehired by ERSI beginning on February 14. (Tr. 316.)

8. There were three other full-time employees working at ERSI's plant in February 2000. Dave Olson began working on February 16 as a general laborer and was assigned to help Stetler with welding operations. (Tr. 23.) Billy Turner was employed as a laborer, primarily performing janitorial duties and cleaning up the trucks. (Tr. 293.) Jeanine Saunders was employed as a secretary and performed clerical duties. (Tr. 292.)

9. The oil tanks installed at the Viking Drive facility initially were vented directly up through the roof by means of four-inch vent pipes connected to each oil tank. After ERSI began using the oil tanks for processing waste oil in approximately January 2000, Blake Hillis noticed that the vapors vented from the oil tanks left an oily sheen on the roof. He decided to redesign the vent system to remedy the problem. (Tr. 313-15.) Hillis and Stetler discussed the design and construction of a new vent system for the oil and water tanks in early February 2000 prior to Stetler's return to work on February 14. (Tr. 315-16.) Hillis also consulted with the engineer who had designed the building regarding the redesign of the vent system for the tanks. (Tr. 316.)

10. When Stetler returned to work at ERSI on February 14, he and Hillis continued their discussion about the new vent system for the tanks. Essentially the project called for the oil and water tanks to be vented into a smaller scrubber tank where most of the remaining contaminants would be removed by means of a water layer before vapors were vented up through the roof into the atmosphere. (Tr. 319-20; Exh. 1.)

11. Both Hillis and Stetler were aware that the oil and water tanks contained combustible vapors and there was a risk of explosion if welding were performed on or near the tanks. (Tr. 322-323, 353-54, 394-96.) They conceived a plan whereby all welding on the new vent system would be done on the shop floor away from the tanks, then the vent pipes would be lifted into place over the tanks and would be connected to the tanks without welding by the use of bolted flanges and threaded fittings. (Tr. 319-23.) Hillis told Stetler that he did not want him to weld on the tanks and that all welding was to take place on the shop floor away from the tanks. (Tr. 395.)

12. Hillis also discussed the vent project with shop supervisor Adam Naquin. On February 14, Naquin reported to Hillis that Stetler had made a comment about doing some welding in the area of the tanks. (Tr. 324-25, 451-52.) Naquin raised this as a concern because he knew that Hillis did not want any welding near the tanks. (Tr. 451.) Hillis, Naquin and Stetler then had a discussion about welding in the area of the tanks. They discussed various ways to make a tank safe to weld on it, including cleaning the tank or filling it full of water to avoid the possibility of explosion. (Tr. 325.) Hillis stated that there was no reason to clean or empty the tanks because there would be no welding in the vicinity of the tanks. (Tr. 329-30.) Hillis was aware of Stetler's meticulous nature as a welder and suspected that Stetler might want to weld the unsealed vent pipe connection from the glycol tank into the W-1 water tank. Hillis stated that there would be absolutely no welding on the tanks or on the fitting from the glycol tank into W-1. (Tr. 329-30.) Both Stetler and Naquin were aware of Hillis' instructions that there was to be no welding in the area of the tanks. (Tr. 159, 324-30, 408, 453-54, 521-23.)

13. On the evening of February 14, Blake and Kathy Hillis left Anchorage on a planned five-day business trip to Tennessee. (Tr. 332-33.) According to Blake Hillis, Naquin was left in charge of plant operations while Stetler was in charge of completing the vent system installation, including fabrication and welding. (Tr. 62, 328, 331-32, 360-64, 386, 406-07.) Hillis did not consider Naquin to have supervisory authority over Stetler concerning welding operations, and regarded Stetler as self-supervised in the area of welding operations. (Tr. 330-33, 386-87, 405-06, 412-417, 473-74, 478-79, 504, 525.) Hillis' delegation of responsibility to Naquin and Stetler was verbal and there were no written rules

or instructions setting forth their respective areas of responsibility. Hillis and Naquin felt there was no confusion about the delegated responsibilities. (Tr. 386-87, 455.) However, according to Stetler's best friend Kirk Gibbs, who had discussed the vent project with Stetler, Stetler considered Naquin to be his supervisor at the plant. (Tr. 253.)

14. While Hillis was in Tennessee, he called the shop several times and spoke to Naquin about plant operations, including the progress of the vent system project. In one conversation, Naquin mentioned that Stetler was struggling with lifting the vent pipes up and down from the tanks, so Hillis authorized Naquin to rent a manlift to make the task easier. (Tr. 333-35.) Naquin subsequently arranged for the rental of a manlift. (Tr. 454, 456-57.) During his absence, Hillis did not speak to Stetler nor was he alerted to any problem with welding on the vent system. (Tr. 174, 333.)

15. On the morning of February 18 at about 8:00 a.m., Naquin and Stetler discussed the status of the vent project. According to Naquin, Stetler told him that he had completed all the welding that could be done on the shop floor and that he needed to tack weld a couple of the flange fittings on top of the oil tanks to make the vent system fit properly. Stetler said he was going to put duct tape over the fittings to seal off the area where he would be welding. Naquin, who had some knowledge about the hazards of cutting on tanks containing flammable materials, felt that duct tape was not a very strong barrier for a welding procedure and suggested that the vent system be purged with steam as an extra safety precaution. After further discussion, Naquin and Stetler agreed that the vent system should be purged with steam prior to welding near the tanks. (Tr. 459-60, 467, 474-75, 494-

95, 500-01, 505-06, 523-24.) Naquin did not notify Blake Hillis of the proposed welding near the tanks because he believed adequate precautions were being taken. (Tr. 484.)

16. Naquin and Stetler walked through the proposed steam purging procedure. (Tr. 460.) Naquin directed Olson to assist Stetler with the purging. Naquin showed Olson how to hook up the steam line, provided him with the necessary fittings, and instructed him to insert the steam hose into the hatch on the glycol tank next to W-1. Shortly thereafter, at about 9:00 a.m. on February 18, Naquin left the shop to pick up some oil from a customer and parts for the shop. (Tr. 41- 44, 50, 460-64.)

17. At about 10:30 a.m. on February 18, Olson and Stetler hoisted the new vent piping and positioned it in place above the water tanks. Stetler instructed Olson to duct tape the vent pipe connection near the 90-degree angle above tank W-1. (Tr. 36-37; *see* Exh. A.) After the steam hose had been operating for about two hours, Olson noticed that steam was starting to come out of the vent pipe above W-1 and he was instructed to shut off the steam. (Tr. 41-44, 48.)

18. Naquin returned to the shop around 11:30 a.m. or noon on February 18. Stetler told him that he had stopped working and was taking an early lunch because the manlift had developed a hydraulic leak and was not working. (Tr. 465.) During the lunch hour, Stetler complained to Olson that Naquin was rushing him to complete the vent project. (Tr. 46.)

19. After lunch on February 18, shortly before 2:00 p.m., Olson was assisting Stetler with final preparations for tack welding the vent pipe above tank W-1. Stetler was using his own welder because it had longer leads than the company's welder and Naquin had denied his request to rent a suitable welder. (Tr. 39-40, 272-73.) After removing the duct

tape from the vent pipe, Olson asked Stetler whether he needed any more help. Stetler replied in the negative and said he was going to take his welding leads up the ladder by himself. Olson then began cutting the ends off of empty oil drums with a pneumatic chisel on the shop floor. He saw Stetler wearing his welding hood and working on the vent pipe near the 90-degree angle above W-1. Olson saw the flash from Stetler's welder go on for about 30-40 seconds. When it stopped Olson asked Stetler if he needed any help. Stetler said, No, I'm just looking at my weld right now but that he would need Olson's help in a few minutes to take his leads down off the tank. Stetler then put his mask down and prepared to do another weld. At that point Olson resumed cutting drums with his back turned to Stetler when the explosion occurred. (Tr. 38-40, 45, 65, 69-71.)

20. Besides Stetler and Olson, other ERSI employees on-site at the time of the explosion were Adam Naquin, Billy Turner and Jeanine Saunders. (Tr. 95-98.) Just prior to the explosion, Naquin was backing in a truck through one of the bay doors and was being assisted by Turner. (Tr. 44-45, 465-66.) Also on-site were two employees of Combustion & Control, Inc., an electrical contractor, who were performing electrical work for ERSI in the boiler room adjacent to the tanks. (Tr. 98-99; Exh. 1.)

21. The explosion knocked out a large hole in the roof over the water tanks and the wall on one side of the building. (Tr. 230; Exhs. 2, 7, 13.) The top of tank W-1 was blown completely through the roof and landed outside the building. (Tr. 97, 233; Exh. 2.) There was no apparent damage to tank W-2. (Exh. 13 at 2.)

22. Stetler was killed in the tank explosion. (Tr. 96.) The explosion also injured Olson, who suffered a disc disorder and hearing loss. (Tr. 49.)

23. The explosion was investigated by the Anchorage Police and Fire Departments. (Exhs. 12, 13.) The Fire Department ' s investigation was conducted by Fire Inspector Larry Alva. In his report, Alva concluded that the explosion was caused by welding on a vent line which provided the ignition source for flammable vapors in the vent line which flashed back to tank W-1 which was filled with flammable liquids and vapors. (Exh. 13 at 3.)

24. The explosion was also investigated by compliance officer SueLynn Hight of the Department ' s occupational safety and health section. Following Hight ' s investigation, the Department issued an occupational safety and health citation to ERSI dated August 4, 2000. (Tr. 93-94, 103.)

III. CONCLUSIONS OF LAW

Department's Prima Facie Case

The federal occupational safety and health standards cited in this case were adopted in Alaska pursuant to AS 18.60.020-.030 and 8 AAC 61.1010. To establish a prima facie violation of a standard, the Department must prove by a preponderance of the evidence that (1) the cited standard applies; (2) there was a failure to comply with the cited standard; (3) one or more employees were exposed or had access to the violative condition; and (4) the employer knew or could have known of the violative condition with the exercise of reasonable diligence. *See* Mark A. Rothstein, *Occupational Safety and Health Law*, ' 102 at 152 (4th ed. 1998); *see also* 8 AAC 61.205(i) (burden of proof for citations and penalties is on the Department by a preponderance of the evidence). Each of the alleged violations in dispute will be discussed in turn.

Citation 1, Item 1

29 CFR 1910.1200(d)(5)(iii) provides:

Hazard communication. Hazard determination. The chemical manufacturer, importer or employer shall determine the hazards of mixtures of chemicals as follows: If a mixture has not been tested as a whole to determine whether the mixture is a physical hazard, the chemical manufacturer, importer, or employer may use whatever scientifically valid data is available to evaluate the physical hazard potential of the mixture.

The Department alleges that ERSI failed to discover, through the exercise of reasonable diligence, that ethylene glycol and the ECO 91 demulsifier were not compatible. According to the Department, ECO 91 contains sulfonic acid, which reacts violently with ethylene glycol. The Department's theory is that ECO 91 was introduced into tank W-1 after processing in the oil tanks and reacted with ethylene glycol introduced into W-1 through the four-inch vent line, causing the explosion that killed Dale Stetler.

Upon review of all the facts and circumstances, we conclude that the Department has not met its burden of proof with respect to Item 1. The alleged violation is based on the Department's premise that ECO 91 mixed with ethylene glycol in tank W-1. However, the weight of the evidence fails to persuade us that ethylene glycol and ECO 91 were ever mixed or that such mixture caused the explosion. As described by Blake Hillis, ethylene glycol and ECO 91 are never mixed as part of ERSI's treatment process. (Tr. 349-53.) Ethylene glycol is contained solely in the glycol tank and is never introduced into the water tanks. Similarly, ECO 91 is added to the oil tanks but is not introduced into the water tanks. After the explosion, compliance officer Hight took a sample of the liquid in W-1 which showed only diesel and other petroleum products, but not any ethylene glycol or ECO 91. (Tr. 354-56.)

The Department did not undertake any additional testing to establish that ethylene glycol and ECO 91 were present in tank W-1 even though such testing is available from local labs. (Tr. 167-70, 354-56.) Hight candidly acknowledged there was no physical evidence that ethylene glycol and ECO 91 were mixed or that there was a spontaneous ignition of those two chemicals. (Tr. 188-89.)

Even assuming that ethylene glycol and ECO 91 became mixed in tank W-1, the record as a whole fails to establish that these chemicals are incompatible or that their mixture constitutes a physical hazard.² The Department's conclusion that ethylene glycol and ECO 91 are incompatible is based largely on Hight's conversation with Dr. Sam Delchad, the inventor of ECO 91, wherein he indicated that the product contained sulfonic acid, and Hight's review of the material safety data sheet (MSDS) for ethylene glycol which states that it reacts violently with sulfonic acid. (Tr. 107-09, 113; Exhs. 3, 4.) However, Dr. Delchad testified that although certain types of sulfonic acid are introduced during the process of manufacturing ECO 91, the sulfonic acid becomes neutralized during the manufacturing process and therefore ECO 91 is not reactive or incompatible with ethylene glycol. (Tr. 77, 86-89; Ex. D.) Dr. Delchad based his conclusions on his experience with the product and the scientific information available to him. To confirm his conclusions, he

² A physical hazard means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, an explosive, flammable, and organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive. 29 CFR 1910.1200(c).

performed a laboratory test by mixing ECO 91 with ethylene glycol and found no reactivity whatsoever. (Tr. 77-79; Ex. D.) Compliance officer Hight had no reason to disbelieve Dr. Delchad's testimony. (Tr. 164-65.) In the absence of any expert opinion or laboratory testing to refute Dr. Delchad's testimony, we conclude that the Department's evidence is insufficient to support its allegation that ECO 91 and ethylene glycol were mixed or that such mixture constituted a physical hazard.

Additionally, we take note of Blake Hillis' testimony that for several years prior to the accident, he discussed with Dr. Delchad the use and potential hazards of ECO 91 in ERSI's treatment process and relied upon the information provided to him by Dr. Delchad. (Tr. 346-49.) While chemical manufacturers and importers are required to independently evaluate the hazards of chemicals produced in their workplaces or imported by them, employers are not required to evaluate chemicals unless they choose not to rely on the evaluation performed by the manufacturer or importer. 29 CFR 1910.1200(d)(1). Here, ERSI reasonably relied on the information provided by the manufacturer of ECO 91 to satisfy the hazard determination requirement for mixtures of chemicals.³

³ Apart from the alleged mixture of ECO 91 and ethylene glycol, the Department alleges that there were other mixtures of chemicals at ERSI's workplace that needed to be tested and evaluated. (Tr. 211; Department's Opening Brief at 12.) However, the Department did not offer any evidence that there were other specific mixtures of chemicals that could have constituted a physical hazard. The example given in the Department's citation is based entirely on the alleged mixture of ECO 91 and ethylene glycol. The Department's general allegation that there were other chemical mixtures that had not been tested or evaluated, without more specific evidence, is insufficient to support a violation of the cited standard.

The Department also maintains that this standard was violated because ERSI employees were not informed of the hazards associated with the mixture of chemicals on site. (Tr. 114, 115; Department's Opening Brief at 12.) However, ERSI was separately cited for not complying with standards pertaining to written hazard communication programs and

For the foregoing reasons, we conclude that the Department has failed to meet its burden of proof to show that ERSI violated the standard as alleged in Item 1.

Citation 1, Item 2

29 CFR 1910.252(a)(2)(vi)(C) provides:

General requirements. Fire prevention and protection. Special precautions. When the nature of the work to be performed falls within the scope of paragraph (a)(1)(ii) of this section, certain additional precautions may be necessary. Prohibited areas. Cutting or welding shall not be permitted in the following situations: In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts.

The Department contends that this standard was violated because ERSI allowed Dale Stetler to weld in the presence of explosive atmospheres without taking adequate precautions. ERSI denies that it violated the standard because (1) Blake Hillis expressly prohibited Stetler from welding on or near the tanks; (2) Adam Naquin did not have supervisory authority over welding operations and was not authorized to permit welding on the tanks; and (3) ERSI had no knowledge, either through Hillis or Naquin, that Stetler would weld in the area of tank W-1 contrary to Hillis' express prohibition.

employee information and training. *See* Citation 1, Items 13a and 13b. These items were resolved in the partial settlement agreement between the parties prior to the hearing. Citation 1, Item 1 addresses hazard determination, not the communication of hazards to employees. Therefore, the Department's allegation that employees were not adequately informed of the hazards associated with chemical mixtures falls outside the scope of Item 1.

The evidence is largely undisputed as to three of the four elements of the Department's prima facie case: applicability of the standard, noncompliance with the standard, and employee exposure. First, it is undisputed that the cited standard applies to welding operations. Second, there is substantial and uncontroverted evidence that Dale Stetler was welding in the presence of explosive atmospheres when tank W-1 exploded. Third, one or more ERSI employees was exposed to the hazards created by Stetler's welding. The remaining element of the Department's prima facie case is the employer knowledge requirement. Knowledge refers to the employer's awareness of the condition allegedly in noncompliance with the cited standard (in this case, welding in the presence of an explosive atmosphere). It is not necessary to prove that the employer knew the requirements of the standard. *See Rothstein*, 105 at 158 (citations omitted).

To meet its burden of establishing employer knowledge, the Department must prove that the employer knew, or with the exercise of reasonable diligence, could have known of the presence of the violative condition. *A.P. O'Horo Co.*, 14 OSHC 2004, 2007 (OSHRC 1991); *see also* AS 18.60.095(b) (a serious violation is not considered to exist if the employer did not, and could not with the exercise of reasonable diligence, know of the presence of the violation). Thus, employer knowledge may be either actual or constructive. *See Rothstein*, ' 105 at 158. Reasonable diligence is a question of fact that will vary in each case. *Martin v. OSHRC*, 947 F.2d 1483 (11th Cir. 1991). Whether an employer was reasonably diligent involves a consideration of several factors, including the employer's obligation to have adequate work rules and training programs, to adequately supervise employees, to anticipate hazards to which employees may be exposed, and to take measures to prevent the occurrence

of violations. *Precision Concrete Construction*, 19 OSHC 1404 (2001); *see also N&N Contractors, Inc. v. OSHRC*, 255 F.3d 122, 127 (4th Cir. 2001) (factors relevant in the reasonable diligence inquiry include the duty to inspect the work area and anticipate hazards, the duty to adequately supervise employees, and the duty to implement a proper training program and work rules).

There is no dispute that Blake Hillis did not have actual knowledge that Dale Stetler would be welding near the tanks on February 18, 2000. The Department argues that Hillis, with the exercise of reasonable diligence, could have known of Stetler's welding in the area of the tanks. Specifically, the Department argues that ERSI failed to provide adequate monitoring or supervision of Stetler while Hillis was out of town and ERSI failed to ensure adequate enforcement of Hillis' verbal work instructions not to perform welding on or near the tanks. According to the Department, an employer may not fail to supervise its employees and then hide behind its lack of knowledge concerning their dangerous working practices. *Danco Construction Company v. OSHRC*, 586 F.2d 1243, 1246 (8th Cir. 1978).

We agree that an employer must provide adequate supervision to ensure compliance with applicable work rules and safety requirements. Here, however, we do not believe that Hillis is chargeable with constructive knowledge of the safety violations that occurred while he was away on business in Tennessee. Hillis left explicit instructions with Stetler and Naquin that there was to be no welding on the tanks. Hillis had a long work relationship with Stetler and had reason to believe Stetler was a qualified and competent welder. Hillis and Stetler had substantial discussions as to how the vent project would be performed and specifically discussed the hazards of welding on or near the tanks. Additionally, Hillis spoke

to shop supervisor Naquin by telephone several times while he was out of town. Naquin updated Hillis on the status of the vent project but did not inform Hillis that Stetler would be welding near the tanks contrary to Hillis' instructions. Under these circumstances, we find no basis to conclude that Hillis knew or should have known of the violations that occurred in his absence.

At the same time, however, we conclude that shop supervisor Naquin had sufficient knowledge of Stetler's welding on the tanks that may be imputed to ERSI. It is well established that the actual or constructive knowledge of a supervisory employee can be imputed to the employer. *A.P. O'Horo*, 14 OSHC at 2007; *Dun Par Engineered Form Company*, 12 OSHC 1962, 1965 (OSHRC 1986); *see also* Rothstein, 106 at 161-162. An employee who has been delegated authority over other employees, even if temporarily, is considered to be a supervisor for purposes of imputing knowledge to an employer. *Dover Elevator Co.*, 16 OSHC 1281, 1286 (OSHRC 1993); *Tampa Shipyards, Inc.*, 15 OSHC 1533, 1537 (OSHRC 1992). It is the substance of the delegation of authority that is controlling, not the formal title of the employee having this authority; an employee who is empowered to direct that corrective measures be taken is a supervisory employee. *Dover Elevator Co.*, 16 OSHC at 1286; *see also* *Mercer Well Services, Inc.*, 5 OSHC 1893 (OSHRC 1977); *Iowa Southern Utilities Co.*, 5 OSHC 1138 (OSHRC 1977).

The evidence leaves little doubt that Adam Naquin was a supervisor for ERSI. Although Dale Stetler may have been responsible for the vent project and all welding work, there is no question that Naquin was the most senior employee on-site and had supervisory authority over plant operations. All of the investigating authorities, including the Police

Department, Fire Department and OSHA dealt with Naquin as the on-site supervisor. Stetler himself regarded Naquin as his supervisor and reported directly to him about the status of the vent project on the morning of February 18. Dave Olson also regarded Naquin as the man in charge. Naquin was the only person (other than the secretary) who spoke to Hillis about plant operations while Hillis was out of town. Naquin was familiar with the vent project and was aware of Hillis' prohibition against welding on the tanks. Naquin was further involved in the vent project when Hillis requested him to rent a manlift for Stetler to use to lift the pipes. Even more significant, it was Naquin who directed Olson to purge the tanks with steam prior to Stetler's welding near the tanks. Naquin was clearly empowered to direct that corrective measures be taken, e.g., purging the tanks prior to welding. The record as a whole does not support ERSI's contention that Naquin was not authorized to make company decisions regarding the vent project or that he had no authority over Stetler's actions in completing the project.

We further conclude that Naquin had actual knowledge that Stetler intended to weld near the tanks on February 18. (Tr. 72.) On that morning, Stetler told Naquin he needed to do some welding on the vent pipes near the oil tanks. Naquin knew without a doubt that Hillis did not want any welding on the tanks and understood that Stetler's request to weld near the oil tanks was contrary to the instructions left by Hillis. (Tr. 474, 522-23.) Nevertheless, Naquin did not prohibit the proposed welding or inform Hillis of this development even though he was in regular telephone contact with Hillis. We believe that Naquin had a duty to inform Hillis of the situation and enforce Hillis' prohibition against welding in the area of the tanks unless and until different instructions were given.

ERSI's argument that Naquin did not know specifically that Stetler would be welding on tank W-1 does not change our conclusion regarding employer knowledge. Naquin knew that Stetler's proposed welding near the oil tanks was contrary to Hillis' prohibition against any welding in the area of the tanks. This should have raised an immediate red flag in Naquin's mind. Moreover, Naquin directed Dave Olson to insert the steam hose for purging into the glycol tank next to W-1. According to Olson, the reason for such purging was to prepare for welding on the vent pipe above W-1 and Naquin was aware of this. (Tr. 41-44, 64-65, 72-73.)

In light of Naquin's supervisory authority over plant operations, his awareness that Stetler intended to weld near the tanks contrary to Hillis' instructions, and his directions for purging the tanks prior to welding, we conclude that Naquin's knowledge and conduct may properly be imputed to ERSI. Moreover, if we accept ERSI's characterization of Stetler as the supervisor of welding operations, then Stetler's own knowledge and conduct may also be imputed to ERSI, subject only to the employee misconduct defense. *See* Rothstein, 100 at 150 and 106 at 161; *see also Western Waterproofing Co. v. Marshall*, 576 F.2d 139, 144 (8th Cir. 1978), *cert. denied*, 439 U.S. 965 (an employer is excused from responsibility for acts of its supervisory employees only if it shows that the acts were contrary to a consistently enforced company policy, that the supervisors were adequately trained in safety matters, and that reasonable steps were taken to discover safety violations committed by its supervisors).

Once the Department has established a prima facie case of violation through the conduct and/or knowledge of supervisory employees, the burden shifts to the employer to prove that the violations were caused by unpreventable employee misconduct. *See Chuck's*

Backhoe, Docket No. 87-716, Decision and Order at 4 (Alaska OSH Rev. Bd. 1989) (employer has burden of proving defense of unpreventable or unforeseeable employee misconduct); *Brock v. L. E. Myers Co.*, 818 F.2d 1270, 1275-76 (6th Cir. 1987) (same); Rothstein, ' 117 at 180. However, since ERSI has withdrawn its employee misconduct defense, it is unnecessary to determine whether the elements of this defense have been established. To the extent that ERSI argues that the cited violations resulted from Stetler's unforeseeable and unpreventable misconduct in contravention of Hillis' explicit work instructions, we conclude that such arguments have been waived by ERSI's withdrawal of the employee misconduct defense.

Accordingly, we conclude that the Department has established a prima facie case of violation with respect to Item 2.

Citation 1, Item 3a

29 CFR 1910.252(a)(3)(ii) provides:

General requirements. Fire prevention and protection. Welding or cutting containers. Venting and purging. All hollow spaces, cavities, or containers shall be vented to permit the escape of air or gases before preheating, cutting or welding. Purging with inert gas is recommended.

The Department alleges that ERSI violated this standard because it did not properly purge the tanks and vent pipes prior to Stetler's welding and that the steaming procedure used by ERSI actually increased the risk of an explosion because the steam picked up other contaminated chemicals. ERSI responds that it complied with the standard because tank W-1 was vented at all times and was purged with steam, an inert gas. ERSI acknowledges that the purging

was not successful, but contends that the standard merely requires that venting or purging be performed and does not require perfection or impose strict liability on the employer.

We reject ERSI's narrow and literal reading of the standard. In our view, the standard requires that whenever an employer undertakes to vent or purge a tank containing potentially hazardous gases prior to welding, such venting or purging must be properly performed. ERSI's narrow reading of the standard would permit an employer to escape liability by virtue of its own negligence in attempting to comply with the standard.⁴

It is obvious from the explosion that ERSI's efforts to purge the tanks with steam prior to welding were unsuccessful. According to fire inspector Alva, the correct method to purge the tanks would have been to remove all the liquid from the tanks, clean the tanks, and then verify by the use of an explosive meter or other measurement, that all flammable vapors had been evacuated. (Tr. 235-36, 243.) Alva further testified that since the water tanks contained contaminated wastewater and were not emptied or cleaned prior to purging, the introduction of steam had the effect of pushing flammable or combustible vapors out of the tanks and into the vent pipes, increasing the risk of explosion from welding on the vent system. (Tr. 244-45.) Because ERSI did not properly purge the tanks and vent lines prior to welding, we conclude that this standard was violated.

⁴ We also note that the cases relied upon by ERSI in support of its strict liability argument involved alleged violations of the general duty clause rather than specific standards. *See, e.g., Brennan v. OSHRC*, 502 F.2d 946 (3rd Cir. 1974); *National Realty & Constr. Co.*, 489 F.2d 1257 (D.C. Cir. 1973). Because the elements of a general duty clause violation differ significantly from violations of specific standards, these cases are inapplicable here.

Citation 1, Item 3b

29 CFR 1910.106(h)(7)(i)(a) provides:

Flammable and combustible liquids. Processing plants. Sources of ignition-general. Precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

The Department alleges that ERSI violated this standard on two occasions: when Stetler welded above tank W-1 on February 18, and when Todd Bauer used a Saws-All to cut a hole in the top of W-1 to connect the four-inch vent pipe from the ethylene glycol tank. As to Stetler's welding, ERSI responds that no precaution could have been clearer than Hillis' absolute prohibition against welding on the tanks, and that other precautions were taken prior to Stetler's welding, such as purging the tanks with steam and duct taping the openings in the vent pipes to prevent the escape of flammable vapors. With respect to Bauer's work, ERSI argues that sufficient precautions were taken because the Saws-All is a non-sparking tool and there is no proof that tank W-1 contained any petroleum products or vapors at the time Bauer cut the hole in the tank.

We conclude that ERSI failed to take adequate precautions to prevent the ignition of flammable or combustible vapors prior to Stetler's welding near the tanks on February 18. It is undisputed that Hillis, Naquin and Stetler were well aware of the existence of potentially explosive vapors inside the tanks. Although ERSI did take some precautions, such as directing that welding be done on the shop floor away from the tanks, prohibiting welding on or near the tanks, and attempting to purge the tanks with steam prior to welding, these

precautions were insufficient to prevent the ignition of flammable vapors. ERSI, having left Naquin in charge of plant operations and Stetler in charge of welding, had a duty to monitor and enforce the prohibition against welding on the tanks or, alternatively, to ensure that the purging procedure was correctly performed to prevent the ignition of flammable vapors.

Regarding Bauer's use of a Saws-All to cut a hole in tank W-1, we find insufficient evidence to establish a violation of the standard. Bauer did not testify and there is little first-hand information about the alleged violation. It is unclear exactly when Bauer cut the hole in W-1 and whether W-1 contained any flammable liquids or vapors at the time. (Tr. 438.) Since the Department failed to establish that Bauer's cutting was done in the presence of flammable or combustible materials, we conclude that the Department has not met its burden of proof as to this alleged violation.

Accordingly, we conclude that the Department has established a prima facie case of violation in Item 3b with respect to Stetler's welding on February 18 but not with respect to Bauer's use of a Saws-All to cut a hole in tank W-1 on a previous occasion. Since one of the two alleged violations in Item 3b has been established, Item 3b should be affirmed.

Citation 1, Item 4a

29 CFR 1910.106(h)(7)(ii)(b) provides:

Flammable and combustible liquids. Processing plants. Sources of ignition. Maintenance and repair. Hot work, such as welding or cutting operations, use of spark-producing power tools, and chipping operations shall be permitted only under supervision of an individual in responsible charge who shall make an inspection of the area to be sure that it is safe for the work to be done and that safe procedures will be followed for the work specified.

The Department alleges that ERSI violated this standard by failing to competently supervise and inspect welding operations to make sure safe work procedures were followed. In response, ERSI makes three arguments: (1) welding was allowed only under the supervision of Stetler, who was a qualified and competent welder; (2) Stetler took precautions prior to welding near the tanks, such as duct taping the openings in the vent system and purging the tanks; and (3) ERSI had no knowledge of Stetler's violative conduct.

The evidence indicates that when Hillis went out of town, he left Naquin in charge of plant operations and Stetler in charge of welding operations. While it appears that Stetler was an experienced welder, we question whether he had sufficient expertise to supervise welding operations in such a potentially hazardous environment as ERSI's plant. Additionally, it is clear to us that Naquin was not qualified to supervise welding operations. In our judgment, there was inadequate supervision of Stetler's welding on February 18, either by Stetler as a self-supervisor or by Naquin as the overall shop supervisor. We believe that Stetler and Naquin are jointly responsible for the failure to adequately supervise and safely carry out welding operations. Both Stetler and Naquin failed to heed Hillis' instructions that there would be no welding on or near the tanks. Both Stetler and Naquin agreed to purge the tanks and vent system with steam prior to welding, but failed to ensure that the purging was done properly. Neither Stetler nor Naquin adequately made sure that the area for welding had been made safe and was free of explosive liquids or vapors. Accordingly, we conclude that there was a failure to comply with the requirements of the standard.

We disagree with ERSI's contention that Stetler alone had supervisory authority over welding operations and that ERSI had no knowledge of his violative conduct. As discussed in Item 2, Naquin had sufficient supervisory authority over the workplace and had specific knowledge of Stetler's intent to weld such that Naquin's knowledge may be imputed to ERSI. Further, if we accept ERSI's argument that Stetler was the supervisor of welding operations, then his conduct and knowledge may likewise be imputed to ERSI. *See* Rothstein, '100 at 150 and '106 at 161. Alternatively, if Stetler is classified as a mere employee and not a supervisor, then ERSI failed to provide adequate supervision over his activities. Regardless whether Naquin or Stetler, or both, are considered to be a supervisor for the purposes of this standard, the employer knowledge requirement has been satisfied.

For the foregoing reasons, we conclude that the Department has established a prima facie violation in Item 4a.⁵

Citation 1, Item 4b

29 CFR 1910.252(a)(2)(iv) provides:

Fire prevention and protection. Special precautions. When the nature of the work to be performed falls within the scope of paragraph (a)(1)(ii) of this

⁵ In its citation, the Department also alleged that this standard was violated when ERSI permitted Dave Olson to cut the tops of 55-gallon drums with a pneumatic chisel without first cleaning or purging the drums. However, the Department appears to have abandoned this allegation in its post-hearing briefing. Olson testified that prior to cutting, the drums were vacuumed to remove any remaining vapors and residue. (Tr. 51, 61.) Compliance officer Hight conceded that this alleged violation was contradicted by Olson's testimony. (Tr. 193.) Since the Department did not present any other evidence of this violation, we conclude that there is insufficient evidence to support the alleged violation regarding Olson's cutting of the drums.

section, certain additional precautions may be necessary: Authorization. Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. He shall designate precautions to be followed in granting authorization to proceed preferably in the form of a written permit.

The Department argues that this standard was violated because no inspection, monitoring or authorization in the form of a written permit was undertaken by ERSI before welding was performed. ERSI responds that all welding was performed under the supervision of the individual specifically responsible for that operation (Stetler), and that the standard does not require a written permit but states only that a written permit is preferable.

We agree with ERSI that a written permit was not necessary for the welding performed by Stetler. For a company of ERSI's size, we believe that verbal authorization is sufficient for welding or cutting operations. The problem here, however, was not ERSI's failure to issue a written permit for welding but rather its failure to provide competent supervision and oversight of the vent system project in Hillis' absence to ensure that safe work practices were followed. We regard the vent system project as sufficiently complex and hazardous that the responsibility for supervising welding should not have been delegated entirely to Dale Stetler. As discussed in Item 4a, we believe that neither Stetler nor Naquin had sufficient expertise to supervise welding operations in such a potentially hazardous environment.

For the foregoing reasons, we conclude that the Department has established a prima facie violation in Item 4b.

Citation 1, Item 4c

29 CFR 1910.252(a)(2)(xiv) provides:

General requirements. Fire prevention and protection. Special precautions. When the nature of the work to be performed falls within the scope of paragraph (a)(1)(ii) of this section, certain additional precautions may be necessary: Supervisor. The Supervisor: Shall secure authorization for the cutting or welding operations from the designated management representative.

The Department argues that this standard was violated because a supervisor for ERSI did not obtain authorization for the welding conducted by Stetler on February 18. ERSI replies that this alleged violation is duplicative of Item 4b and that Stetler was specifically designated as the supervisor in charge of welding.

We agree that there is considerable overlap between this item and Item 4b, but we note that these items were grouped into a single violation. Upon review, we conclude that this standard was violated because the on-site supervisor, regardless whether it was Naquin or Stetler, failed to secure authorization from Blake Hillis for welding in the area of the tanks. As discussed previously, both the knowledge and conduct of a supervisory employee may be imputed to the employer for the purpose of establishing the Department's prima facie case. *See* Rothstein, ' 100 at 150 and ' 106 at 161. Naquin may be considered as a supervisor for purposes of this standard, based on his supervisory authority over plant operations and his specific knowledge that Stetler intended to weld near the tanks contrary to Hillis' instructions. Naquin spoke to Hillis several times about plant operations while Hillis was out of town, including the status of the vent project, but failed to notify Hillis of Stetler's proposed welding on February 18 or secure Hillis' permission for such welding. Alternatively, Stetler may be considered as a supervisor for purposes of this standard since he was left in charge of welding operations and he also failed to secure authorization from Hillis for the proposed welding near the tanks contrary to Hillis' instructions.

For the foregoing reasons, we conclude that the Department has established a prima facie violation of Item 4c.

Classification of Violations and Penalty Assessment

ERSI argues that the classification of the violations and the proposed monetary penalties should be reduced. Each of the disputed violations was classified as serious. A serious violation is considered to exist if the violation creates in the place of employment a substantial probability of death or serious physical harm. AS 18.60.095(b). The key elements in determining whether a violation is serious are the probability of an accident occurring and the gravity of any resulting injury or illness. *See* Rothstein, ' 313 at 365-66. In our view, there is no question that the disputed violations were properly classified as serious, considering that an accident occurred resulting in the death of one employee and significant injury to another employee. Therefore, we find no basis to change the classification of the violations.

The Department may assess a penalty of up to \$7,000 for a serious violation. AS 18.60.095(b). In assessing a penalty, the Department must give due consideration to the employer's size, the gravity of violation, the good faith of the employer, and the history of previous violations. AS 18.60.095(h). To calculate monetary penalties, the Department relies on guidelines set forth in the Field Inspection Reference Manual (FIRM). 8 AAC 61.140(c). The Review Board, however, is not bound by the Department's criteria in evaluating the classification of a violation or the assessment of a penalty. 8 AAC 61.140(h).

Based on the severity of the accident, the Department calculated an initial penalty of \$7,000 for each of the four items in dispute here. In accordance with the FIRM guidelines,

the penalty for each violation was reduced by thirty percent (30%) based on ERSI's company size and by an additional ten percent (10%) for history since ERSI had no prior violations in the preceding three years. This resulted in a final assessed penalty of \$4,200 for each violation. (Tr. 116, 130, 138-39, 148).

Since the Department awarded ERSI the maximum penalty reduction for employer size and history, we find no reason to adjust the penalty for these criteria. Moreover, given the seriousness of the accident, we find no reason to reduce the penalty with respect to the gravity of the violation. Regarding the element of good faith, the most important factor is the employer's overall safety program. *See* Rothstein, ' 95 at 143 (citations omitted). We recognize that after the accident, ERSI cooperated with the Department's investigation and took affirmative steps to abate the alleged violations and implement additional safety measures. However, we find that prior to the accident, ERSI did not have a good overall safety program in effect. ERSI purported to have a written safety and health plan in effect at the time of the accident, but there is no evidence that Dale Stetler was provided with a copy of the plan or was familiar with its contents. (Tr. 381, 478; Ex. C). When compliance officer Hight investigated the accident, she specifically asked Blake Hillis to provide her with any safety and health plan in effect at the time of the accident, but he was unable to do so. Hillis told her that ERSI was in the process of having a plan prepared but that it was not in effect at the time of the accident. (Tr. 105). Under the foregoing circumstances, we find that no penalty reduction for good faith is justified. Nevertheless, we believe that an adjustment in the penalty is appropriate because Items 2, 3 and 4 are to some degree overlapping and

duplicative. Accordingly, we exercise our discretion to reduce the total penalty amount for these three items from \$12,600 to \$10,000.

IV. ORDER

Based on the foregoing findings of fact and conclusions of law, it is hereby ordered as follows:

1. Citation 1, Item 1 is DISMISSED.
2. Citation 1, Item 2 is AFFIRMED as a serious violation.
3. Citation 1, Items 3a and 3b are AFFIRMED as a single serious violation.
4. Citation 1, Items 4a, 4b and 4c are AFFIRMED as a single serious violation.
5. The total penalties for Items 2, 3 and 4 are reduced to \$10,000.

DATED this 22nd day of May _____, 2002.

ALASKA OCCUPATIONAL SAFETY
AND HEALTH REVIEW BOARD

By: _____/s/_____
Timothy O. Sharp, Chair

By: _____/s/_____
Carla Meek, Member

By: _____/s/_____
Cliff Davidson, Member