



United States of America
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
1120 20th Street, N.W., Ninth Floor
Washington, DC 20036-3457

Secretary of Labor

Complainant,

v.

Wynnewood Refining Company,

Respondent.

OSHRC Docket No. 07-0609

APPEARANCES:

Brian L. Hurt, Esquire
Michael D. Schoen, Esquire
U.S. Department of Labor
Dallas, Texas
For the Complainant.

William L. Davis, Esquire
Jackson Lewis
Dallas, Texas
For the Respondent.

Before: Covette Rooney
Administrative Law Judge

DECISION AND ORDER

This proceeding is before the Occupational Safety and Health Review Commission (“the Commission”) pursuant to section 10(c) of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 651 *et seq.* (“the Act”). The Occupational Safety and Health Administration (“OSHA”) conducted an inspection of Respondent, Wynnewood Refining Company (“Respondent” or “WRC”), during May of 2006. As a result, OSHA issued to Respondent a Citation and Notification of Penalty alleging a number of violations of the Act. Respondent timely contested the citation. The parties arrived at a settlement agreement in regard to all of the alleged violations, except for Item 1 of Willful Citation 2; that item alleged a violation of 29 C.F.R. 1910.119(j)(5), a provision of OSHA’s

process safety management (“PSM”) standard.¹ The hearing as to Citation 2, Item 1, was held March 4-6, 2008, and April 2, 2008. Both parties have filed post-hearing briefs and reply briefs.

Background

Respondent’s refinery, located in Wynnewood, Oklahoma, processes petroleum products.² The refinery has various units that operate under pressure and vent any over-pressurization resulting from their processes to a flare line system. The flare line relieves over-pressurization and carries releases of flammable and other hazardous vapors to the refinery’s main flare, where they are burned off into the atmosphere.³ One of the units at WRC is an alkylation unit (called the “Alky Unit”) that uses hydrofluoric (“HF”) acid as a catalyst to convert hydrocarbons into higher octane gasoline. Because HF acid is highly corrosive, it goes through an acid relief neutralizer (“ARN”) vessel before it is vented to the flare line; the ARN “scrubs” the HF acid before it enters the line to prevent HF acid from getting into the flare line and corroding it.⁴ However, due to the potential for the flare line to contain HF acid, as well as flammable vapors, and due to the possibility of exposure to HF acid, employees who work in the Alky Unit’s acid area must wear personal protective equipment (“PPE”). (Tr. 41-42, 64-68, 127-29, 157, 163, 302, 504-07, 792-93; C-16, p. 1, C-21, pp. 19-27, 41-44).

In 2003, WRC performed a piping inspection to determine the condition of the facility’s piping, and what piping would need to be replaced, in an upcoming “turnaround” set for February 2004.⁵ The flare line in the Alky Unit did not have thickness problems at that time. However, in June 2004, David Long, WRC’s chief refinery inspector, became aware of a leak in the Alky Unit flare

¹The settled items, which have become a final order of the Commission, were severed from Citation 2, Item 1, on April 20, 2007. The docket number for the settled items is 06-1988.

²The refinery, which has been owned by Gary-Williams Energy Corporation since 1995, was previously owned by Kerr-McGee. (Tr. 716, 857).

³The main flare, also called the Peabody flare, is shown in R-17-1. (Tr. 792-93, 896-97).

⁴The Alky Unit, ARN and flare line are shown in C-17A; on C-17A, the ARN is marked as “#1,” the line connecting the ARN with the flare line is marked as “#2,” and the flare line is marked as “#3.” (Tr. 66-68).

⁵In a turnaround, all equipment is shut down and inspected, and equipment deficiencies, such as thinning pipe, are corrected; a turnaround takes about four weeks. (Tr. 124-25, 825-26).

line during a daily operational meeting.⁶ The leak was repaired on June 14, 2004, by putting a fiberglass wrap called Perma Wrap (“PW”) around it and then putting a clamp over the repair.⁷ Another leak occurred in the Alky Unit flare line three months later, and that leak was repaired September 20, 2004, with PW and a clamp. The facility’s work orders relating to those repairs referred to them as temporary, and the work order as to the September repair stated that “[p]ermanent repair must be done when unit is shut down.” Due to these and some additional leaks, in November 2004, Mr. Long hired Roger Hoffman, a contract inspector, to test the flare line’s thickness. Mr. Hoffman took thickness readings of the line with WRC’s ultrasonic testing machine. Mr. Hoffman took his readings of the Alky Unit flare line, which is approximately 100 feet long, every 10 to 20 feet; he also showed the areas he tested on isometric drawings of the flare line, indicating with an asterisk the areas that were at or below the thickness specifications in WRC’s owner/user inspection manual (“Manual”).⁸ According to Mr. Hoffman’s readings, the flare line in the Alky Unit had 12 places that were at or below the .22-inch retirement thickness set out in WRC’s Manual.⁹ (Tr. 42-51, 55-65, 69-72, 123-24, 129-30, 167-68, 207-08, 299, 826; C-1-2, C-3, p. 37, C-5, C-10).

On February 11, 2005, at the maintenance meeting, Mr. Long reported to management Mr. Hoffman’s testing results and recommended replacing certain parts of the Alky Unit flare line.¹⁰ No

⁶Operational meetings take place daily at 8 a.m. and consist of managers reporting on what is going on in the refinery. Maintenance or planning meetings occur daily at 1 p.m. and consist of managers addressing upcoming maintenance. “After meetings” take place after either meeting; these have fewer attendees and address items needing more attention. (Tr. 43-44, 151).

⁷Mr. Long took thickness readings of this area of the flare line after learning of the leak. (Tr. 84-85; C-8).

⁸From his drawings, it appears that Mr. Hoffman took readings every 10 feet in the area where the leaks had been occurring and every 10 to 20 feet in other areas. *See* C-1-2.

⁹The piping in the Alky Unit flare line was either 14 or 16 inches in diameter, depending on the area of the Alky Unit, and C-3, WRC’s Manual, sets out a minimum acceptable thickness of .22 inches for 10 to 20-inch-diameter process piping. (Tr. 72; C-3, p. 37).

¹⁰Mr. Long highlighted on C-1 and C-2, Mr. Hoffman’s drawings, the areas of the flare line that he recommended be replaced; C-1 shows the part of the line where leaks had occurred, and C-2 shows another area Mr. Long believed should be replaced. (Tr. 72-80).

one questioned the testing results at the meeting but no decision was made, and further leaks occurred.¹¹ At some point WRC determined the PW repairs were not effective as they could not withstand the HF acid in the line, and in 2005 another method began to be used; this method consisted of putting a metal patch or plate along with a sealant called Belzona over the affected area and then clamping or strapping the repair in place. The line continued to have leaks, however, including areas that had been repaired before, and PW was still used for some repairs. Mr. Long took additional ultrasonic readings of the line on September 20, 2005, of areas near where the temporary repairs had been made; his thickness readings, which showed more corrosion and metal loss, were from .07 to .23 inches.¹² He presented his findings in the maintenance meeting that day and again recommended replacement of that part of the flare line; Tom Harris, the maintenance and construction manager, and Curtis Stubblefield, the maintenance superintendent at that time, agreed with Mr. Long, but Bill Gentry, WRC's operations manager, stated it was economically infeasible to shut down and replace the line. During September 2005, the maintenance department began making a new line for the area that Mr. Long had recommended for replacement; the new line was completed in late 2005 or early 2006.¹³ (Tr. 72-80, 86-97, 104-06, 120-21, 147-51, 156-61, 168-70,

¹¹C-10 contains a number of work orders ("WO's") showing repairs performed in 2005. The WO for an April repair, done with Perma-Wrap, states: "Repair leak in the flare line south of D170. Located right where it was repaired before." The WO for a May repair, done with a clamp and a sealant, states: "Repair leak in relief line going to ARN – 5D2. Temporary repairs made 05/19/05." The WO for a July 13 repair states: "Repair leak on ARN flare line at Alky." The WO for a repair done July 19, with a patch and Perma-Wrap, states: "Hole in S end flare line on ARN header when the accumulator dumps into it. Patch blew out while coming on." The WO for a repair started on September 6, 2005, and completed January 4, 2006, with Belzona and patches, states: "Install temporary patches on bottom of Alky flare header per drawings provided by D. Long ... including leak on line N.E. of control room door." The WO for a September repair states: "Flare line leaking in rack above T170 – where it has been patched before. Temp. repairs have been made again using Perma-Wrap. Section of flare line needs to be replaced." The WO for a November repair, done using a clamp, states: "Repair leak in ARN line @ Alky."

¹²Mr. Long's readings are shown on C-9, and he highlighted and numbered the five areas where repairs had been made; No. 1 was near where the ARN dumped into the flare line, and No. 3 was near where the depropanizer tower dumped into the flare line. (Tr. 86-93).

¹³Mr. Long recalled a meeting in early May 2006, when plans were being made to shut the Alky Unit down and replace the flare line; Mr. Long believed the meeting took place the Monday

178-84, 191-92, 205-06, 224-25, 238-40, 298-303, 310-14, 318-22, 327-30, 337-44, 356, 398-401, 442, 487-89, 497-99, 525-27, 543-44, 561-66, 571-73, 587-88, 850, 854).

Sometime during the fall of 2005, various operators who worked in the Alky Unit area began to request of Paul Howard, the supervisor of that area, that the line be replaced due to the leaks and drips that were occurring.¹⁴ On December 16, 2005, at WRC's monthly Health and Safety Committee meeting, the first item on the written minutes of that meeting stated: "Alky flare leaks continue."¹⁵ Attendees at that meeting included Paul Howard, Bill Gentry, WRC's operations manager, and Johnny Ray, the refinery's safety manager. Around March 10, 2006, Mr. Howard put up caution tape under an area of the flare line to warn employees, as that area had had leaks and had been repaired several times; in early May 2006, caution tape was put up under another area of the line. In March or April 2006, Wesley Walker, a WRC console technician who oversees the Alky Unit's operation, went to a 1:00 p.m. meeting to report several "pressure excursions" that had occurred on that unit the night before.¹⁶ At the meeting, Mr. Walker said that the pressure on the unit had gotten high and that he and the field operators had been worried about controlling the pressure. Specifically, they were concerned that a relief valve on the bottom of the depropanizer tower on the Alky Unit would relieve, overpower the acid neutralizer, and go to the flare line, which had reduced integrity because of the patched holes on the line; they were also concerned that such a release could result in a fire or in someone being overcome by HF acid vapor. Mr. Walker also said that there was spray or mist from the line, near where the ARN went into the line, that had contacted an operator's PPE. At the

before OSHA arrived. Three WRC management employees indicated the decision to replace the line was made after OSHA's arrival, and three other managers indicated the decision was made within the week before the fire. (Tr. 94, 132-33, 247, 326, 417, 526, 586, 841, 856).

¹⁴Mr. Howard said he had seen drips, mist and sprays coming from the line. Two of the drips he had seen were where the ARN and depropanizer, respectively, went into the line, and both areas had had previous repairs. The mist and two sprays he saw were also where previous repairs had been made, *i.e.*, where the ARN went into the line. (Tr. 517-24).

¹⁵A note written next to this item states "down to one," and both Mr. Ray and Mr. Gentry indicated this could have meant that there was one unrepaired leak at that time. (Tr. 508, 602-04).

¹⁶Mr. Walker oversees the refinery's units by observing computer monitors on a console, and two field operators help him to resolve problems that occur on the units. (Tr. 464-65).

meeting, Charles Carter, the maintenance superintendent who had replaced Mr. Stubblefield, stated that they were looking into a different type of patch for the flare line and were working out a plan for replacing the line. (Tr. 116-21, 221-22, 324-27, 402-06, 446-48, 461-72, 476-79, 482-83, 500-05, 529-37, 546, 593-95, 600-04, 806; C-17C, C-17F, C-19).

On May 9, 2006, Casey Perkins, an OSHA compliance officer (“CO”), began an inspection of WRC due to a complaint OSHA had received; one of the complaint items involved the flare line. The CO held an opening conference with David Roderick, the refinery manager, and other WRC officials and then attended WRC’s required safety orientation. The CO conducted his walk-around inspection on May 10, 2006, with Mr. Ray, the safety manager. The CO observed and photographed the Alky Unit, the ARN and the flare line, and he saw areas of the line where repairs had been made and corrosion was ongoing; he also saw an area where a barricade was set up under a section of the flare line, another area where vapor was coming out of the line, and a further area where Mr. Ray told him a blowout had occurred the day before. The CO was not at WRC on May 11, 2006, but he returned on May 12, 2006, after learning of a fire that had occurred that day. The fire burned for a number of days, after which the CO continued his inspection. (Tr. 657-708, 716-17, 753; C-17A-Y).

Based on his photographs, his interviews of employees, and documents at the facility, the CO concluded WRC had not maintained the flare line in a safe and operable condition as required by the cited standard. He determined the line was being operated below its retirement thickness, as stated in WRC’s Manual, and that holes and leaks in the line exposed employees to the hazards of fire and HF acid. He also determined the fire was caused by operating the Alky Unit with equipment deficiencies; operators were venting pressure excursions in the depropanizer by manually venting the overhead accumulator to the flare line to control the pressure released to the line, causing the depropanizer to over-pressure and release to the flare line, which blew out a Belzona repair on the line and released a vapor cloud that encountered an ignition source and ignited.¹⁷ The CO concluded that management had knowledge of the PSM standard and the line’s compromised condition, which had existed since June 2004; he further concluded that WRC had written policies in place that, if

¹⁷The CO noted that multiple repairs had been made to the area that blew out, which was where the depropanizer tower dumped into the top of the flare line; the CO also noted that there were several other areas on the line where repeated repairs had been made. (Tr. 713-14).

followed, would have resulted in appropriate action in regard to the flare line. The CO determined that, under the circumstances, the flare line's condition was a willful violation. (Tr. 708-21).

The Parties' Stipulations

The parties, in their Joint Pre-Hearing Statement, agreed to the following stipulations:

1. The parties agree that jurisdiction of this proceeding is conferred upon the Occupational Safety and Health Review Commission, hereinafter referred to as the Commission, by Section 10(c) of the Act, 29 U.S.C. § 659(c).

2. The parties agree that Respondent is an employer engaged in a business affecting commerce within the meaning of Section 3(5) of the Act, 29 U.S.C. § 652(5).

3. The parties agree that 29 C.F.R. 1910.119(j)(5) and 1910.119(d) apply to the subject worksite and issues presented.

The Secretary's Citation

As issued, the citation alleged a violation as follows:

29 CFR 1910.119(j)(5): The employer fails to correct deficiencies in equipment that were outside acceptable limits (as defined by process information in 29 CFR 1910.119(d)) before further use or in a safe and timely manner:

The employer violated this standard on May 9, 2006, Wynnewood Refining Company failed to ensure mechanical integrity of the flare line system in the HF Alkylation Unit exposing employees to the hazards of HF acid release.

To abate this violation, the employer must ensure that the on-going mechanical integrity of the flare line system in the HF Alkylation Unit is maintained as required.

The Secretary's amended citation, showing the amended terms in bold letters, alleges that:¹⁸

29 CFR 1910.119(j)(5): The employer fails to correct deficiencies in equipment that **are** outside acceptable limits (as defined by process **safety** information in 29 CFR 1910.119(d)) before further use or in a safe and timely manner:

The Employer violated this standard on **or about May 12, 2006, and at times prior thereto, where** Wynnewood Refining Company failed to ensure mechanical integrity of the flare line system in **and around** the HF Alkylation Unit exposing employees to the hazards of HF acid **and flammable vapor** release.

To abate this violation, the employer must ensure that the on-going mechanical integrity of the flare line system in **and around** the HF Alkylation Unit is maintained as required.

¹⁸The Secretary's motion to amend the citation was granted on September 13, 2007.

The Parties' Positions

The Secretary contends the Alky Unit flare line was clearly being operated outside acceptable limits, in violation of the standard. She notes there were recurring leaks and multiple repairs to areas of the line that compromised the mechanical integrity of the pipe. She also notes that WRC's own Manual, which was intended to ensure compliance with the standard, required process piping like the flare line to be replaced when it was at or below .22 inches thick; she further notes that many areas of the line were well below that thickness due to corrosion and thinning of the piping. (S. Brief, pp. 6-12). The Secretary asserts that the violation was serious, due to the potential for releases from the line of flammable vapors or HF acid; flammable vapors could cause fires and serious burns or death, contacting HF acid could cause severe burns, and inhaling HF acid vapor could cause lung injuries or death. (S. Brief, pp. 1-2). The Secretary also asserts the violation was willful, for the following reasons: (1) WRC's management knew of the PSM standard and was aware of leaks in the flare line as early as June 2004; (2) WRC's management knew for some time before the fire that the line had significant corrosion and thinning in areas and that the temporary repairs being made were not effective in stopping leaks; and (3) despite the recommendation of Mr. Long and others at WRC to replace certain areas of the flare line, and despite the recurring leaks and multiple repairs to the line, even by the day of the fire WRC had not finalized its plans to shut down the Alky Unit and begin replacing those areas of the line. (S. Brief, pp. 3-4, 22-28).

Respondent contends OSHA concluded the flare line's condition was willful because of the fire that occurred. It notes that OSHA did not find the flare line to be an imminent hazard, or that the Alky Unit needed to be shut down, after being at the facility on May 9 and 10, 2006. (R. Brief, pp. 3, 8-10). It also notes that OSHA never interviewed Mr. Roderick, the refinery manager, who would have advised it of everything WRC had done to make the flare line safe. WRC asserts that OSHA has used the term "minimum retirement thickness" to muddy the water; Mr. Roderick and others testified that the line could operate at thicknesses much less than the .22 set out in WRC's Manual and that in any case the repairs to the line restored it to a safe operating thickness. (R. Brief, pp. 9-10, 14-17). WRC further asserts that OSHA focused on the evidence of thinning of the line and drips but offered no proof that such evidence established a known risk of a flammable vapor release. In addition, WRC notes that OSHA performed no engineering studies to determine the cause of the

accident and whether WRC's repair methods had failed; its expert, on the other hand, investigated the accident and concluded it was caused by an unforeseeable massive release of vapors and liquids that escaped from the Alky Unit and resulted in the fire. (R. Brief, pp. 1, 6-7, 15). WRC contends there was no willful violation in this case due to its continuous evaluation and efforts to make the flare line safe, its good-faith belief the line was not in a dangerous condition, and the fact it had a plan in place to shut down the Alky Unit and replace the flare line. (R. Brief, pp. 5, 16-17).

Whether there was a Violation of the Standard

To prove a violation of a specific OSHA standard, the Secretary must demonstrate by a preponderance of the evidence that (1) the standard applies, (2) the terms of the standard were not met, (3) employees had access to the violative condition, and (4) the employer knew, or could have known with the exercise of reasonable diligence, of the violative condition. *Astra Pharmaceutical Prod.*, 9 BNA OSHC 2126, 2129 (No. 78-6247, 1981).

The Applicability of the Standard

As to the first element, the parties have stipulated, as set out *supra*, that 29 C.F.R. §§ 1910.119(j)(5) and 1910.119(d) apply to WRC's facility and the issues presented. I find, accordingly, that the Secretary has shown the applicability of the cited standard.

Whether the Terms of the Standard were Met

As to the second element, I find that the evidence establishes that the terms of 29 C.F.R. 1910.119(j)(5) were not met, in that WRC did not correct deficiencies in the flare line that were outside acceptable limits before further use or in a safe and timely manner. My reasons follow.

Section (j) of 1910.119 addresses the mechanical integrity of process equipment, including relief and vent systems like the flare line in the Alky Unit.¹⁹ In particular, 29 C.F.R. 1910.119(j)(1) states that:

¹⁹At the hearing, WRC elicited testimony from several witnesses that the flare line was not process piping. However, WRC does not mention this testimony or raise any argument in this regard in its post-hearing filings. WRC is thus deemed to have abandoned any such argument. I find that the Alky Unit flare line was process piping, in light of the standard's language and the fact that both parties have stipulated to the applicability of the standard.

Paragraphs (j)(2) through (j)(6) ... apply to the following process equipment: (i) Pressure vessels and storage tanks; (ii) Piping systems....; (iii) Relief and vent systems....

As the Secretary notes, to determine whether equipment is “outside acceptable limits,” the standard refers to the process information that an employer is required to compile pursuant to 29 C.F.R. 1910.119(d). Here, WRC’s process safety information relating to the mechanical integrity of the Alky Unit flare line was contained in C-3, WRC’s Manual, which, as noted above, sets out a minimum acceptable thickness of .22 inches for process piping that is from 10 to 20 inches in diameter. *See* C-3, p. 37. In addition, Johnny Ray, WRC’s safety manager, testified that C-3 was meant to comply with the mechanical integrity provisions of the PSM standard, and Steve Chilton, WRC’s manager of technical services, confirmed that this was the case. (Tr. 141-44, 489-90). Moreover, C-3 specifically states that the methodology used for evaluating the existing process piping systems, such as the flare line, met or exceeded the requirements of API 570 (covering the inspection, repair, alteration and rerating of piping systems) and API 751 (addressing the safe operation of HF acid alkylation units). *See* C-3, p. 10, H.3.c. *See also* C-14, C-16. Therefore, as the Secretary concludes, C-3 had precisely the information contemplated by 29 C.F.R. 1910.119(d)(3), and Mr. Long properly relied on the Manual to define the acceptable limits for the mechanical integrity of the piping in the Alky Unit flare line.

The background section of this decision sets out the evidence pertaining to the flare line’s condition during the relevant period and the circumstances leading up to the fire that occurred on May 12, 2006. Other than the CO’s testimony, the evidence in the background is derived primarily from the testimony of Mr. Long, who was not a manager,²⁰ undisputed documentary evidence, and the testimony of managers, including Messrs. Chilton, Gentry, Harris, Howard, Ray and Roderick. I observed Mr. Long’s demeanor as he testified, and I found him credible and convincing.²¹ Further, most of his statements were supported by undisputed documentary evidence and/or management

²⁰C-3 states that the “Inspection Department is primarily a staff function to Plant Management.” *See* C-3, p. 2.

²¹The record shows that Mr. Long was an API-certified inspector who had been the chief refinery inspector for the entire 13 years he had worked at WRC. (Tr. 39-40, 652-53).

testimony. In addition, while Mr. Walker, who testified about the pressure excursions in the Alky Unit, was likewise not a manager, I observed his demeanor as he testified and also found him credible and convincing; moreover, almost all the management employees who testified confirmed Mr. Walker's statements. I find the evidence set out in the background section particularly reliable, as it is based on witnesses found to be credible, undisputed documentary evidence, and statements of management employees that constitute admissions. I thus adopt the evidence in the background as findings of fact in this matter, except for the CO's testimony, which will be addressed separately.²² Based on the background section, WRC did not comply with its Manual as to the flare line.

As noted *supra*, WRC contends, based on the testimony of Mr. Roderick and others, that the flare line could operate safely at thicknesses much less than the .22 inches specified in the Manual. It also contends that the repairs it made restored the line to a safe operating thickness and that the line was not a hazard. In this regard, WRC presented an expert witness, Thomas Rodante.

Mr. Rodante, a fire protection engineer with 30 years of experience as a fire protection and safety engineer with Caltex, an oil company, currently works for a consulting firm named Baker Risk.²³ He testified that WRC hired Baker Risk to investigate the cause of the accident, that he was on the scene the Monday after the fire began, and that his investigation included securing, testing and analyzing physical evidence, interviewing employees, and reviewing WRC's documentation. He

²²In adopting the background evidence as findings of fact, I have noted that certain management employees gave testimony on cross-examination that conflicted with their direct examination testimony. For example, Paul Howard, the Alky Unit supervisor, testified on direct that he remembered an instance over two months before the fire of a patch blowing out on the flare line and exposing an employee "downwind" to HF acid. He then indicated on cross that, between 2004 and the date of the fire, there had been no blowouts on the line; on redirect, he indicated he recalled a blowout and a leak occurring before the fire. (Tr. 537-38, 547-48, 558). There are a number of such discrepancies in the testimony of WRC's managers, and, in those instances, I find the testimony of those managers on cross-examination to be unreliable. Other such instances are addressed in this decision *infra*.

²³During his career, Mr. Rodante represented Caltex at the API, and he served on task forces and as chairman of technical committees at both the API and the NFPA. He also was involved in the Center for Chemical Process Safety for many years; he served as the Center's technical management committee chairman, and he implemented that committee's textbook on PSM at Caltex. (Tr. 865-70).

further testified that the fact that WRC's testing showed parts of the flare line to be below the .22-inch thickness set out in the Manual did not mean the line had to be replaced then. Mr. Rodante said WRC had three options, *i.e.*, temporary repairs, permanent repair or replacement, and derating. He also said these options are in API 570 and that derating consists of (1) determining the stresses and pressures the piping is subject to and calculating what the thickness should be, (2) adding 50 percent as a safety factor, and (3) multiplying that total by the years the facility wants the pipe to last. Mr. Rodante stated that in speaking to personnel, he determined the flare line was discussed in meetings, that WRC engineers had done the necessary calculations, and that they had also considered a 2005 engineering study that estimated the pressure on the flare line in worst-case conditions; pursuant to the study, and with the repairs to the line, WRC was confident of the line's mechanical integrity as it would see only about 50 PSI. (Tr. 865-67, 870-71, 875-88, 915-18, 931-33).

Mr. Rodante opined the PW and Belzona repairs WRC made were acceptable and effective, when considering they were temporary repairs. He explained that, based on his investigation, WRC assessed both methods, discussing and researching them and speaking to vendors. He further explained that the repairs stopped the leaks and allowed the flare line to operate at the temperatures and pressures it was subject to.²⁴ Mr. Rodante disagreed with OSHA's determination the repairs were ineffective. He noted that the fact that a temporary repair does not last as long as expected does not mean it was ineffective and that, in any case, WRC had gone from PW to Belzona. He also found WRC's increased scrutiny and inspections of the line appropriate, due to the concern about the mechanical integrity of the line, and that WRC, as of May 9, 2006, had a plan to replace the line. Mr. Rodante believed there was no violation of the cited standard. (Tr. 887-90, 895-901, 918-22).

Mr. Rodante also opined the accident was an abnormal, unforeseeable occurrence, based on his review of the events and the materials he saw. He explained the flare line did not normally see a lot of pressure and was designed to handle vapor but not liquids. He also explained that, on May 12, 2006, the Alky Unit was initially in circulation mode and then feed was put into the unit. At that point, the console technician began to see pressure spikes and could not control them; the technician radioed the field operators to go to the depropanizer overhead accumulator and open up its valve to

²⁴Mr. Rodante said the use of caution tape to keep employees out of a certain area, just in case something happened, despite the PPE requirement for the area, was reasonable. (Tr. 921).

relieve some of the pressure into the ARN. The operators were doing so when the technician heard a loud rumbling noise, indicative of a large relief valve opening, and he evacuated the area and the release and fire occurred. Mr. Rodante tested the relief valve on the overhead accumulator and the two relief valves on the depropanizer; based on his testing, he believed the valve on the overhead accumulator failed to open, causing a back-pressure on the depropanizer, and that when the depropanizer valves opened, a buildup of liquid released into the depropanizer “T,” or relief header, and then went into the flare line. Mr. Rodante indicated his belief that much of the damage to the piping shown in OSHA’s photographs, such as C-17W, was due to fire and heat damage as well as corrosion caused by water being sprayed on the piping, which contained HF acid, during the fire; he also pointed out one area, shown in R-17, page 4, where the piping had a breach in the top, which had not been repaired, but not in the bottom, which had been repaired with Belzona and a patch. He admitted, however, that the release had caused at least six breaches in the piping; in addition, he admitted that, based on his understanding of the accident, the area where the vapor cloud escaped on May 12, 2006, and where the flare line compromised, was near the depropanizer tower and within the area of the line that Mr. Long had recommended for replacement. (Tr. 897-923, 927-30).

I agree with Mr. Rodante’s testimony that derating, or rerating, of piping like the Alky Unit flare line is allowed, pursuant to API 570. *See* C-14, section 8.3. However, I disagree with Mr. Rodante’s opinion that WRC did what was required to properly rerate the piping. First, C-14 states, in section 8.3, that “rerating piping systems ... may be done only after all of the following requirements have been met.” That section then goes on to list ten specific things that must be done before rerating takes place. The first two are as follows:

- a. Calculations are performed by the piping engineer or the inspector.
- b. All reratings shall be established in accordance with the requirements of the code to which the piping system was built or by computation using the appropriate methods in the latest edition of the applicable code.

None of the WRC employees who testified said that calculations had been done to determine whether the flare line, with its diminished thickness, could operate safely. Moreover, while Mr. Roderick testified that he and other engineers, such as Messrs. Chilton, Gentry and Harris, determined that a “stovepipe” thickness of .01 or .02 inches would be adequate for the flare line to

operate safely, he never stated that anyone performed any calculations or analysis in this regard.²⁵ (Tr. 831, 862-63). Further, Mr. Roderick's testimony about the flare line study that Mr. Rodante mentioned shows it was actually done prior to 1995, when the facility was owned by Kerr-McGee. (Tr. 856-57, 864). I conclude that a flare line study done over ten years before the accident, when the flare line and other equipment may well have been in very different condition, has no relevance in this matter, especially since WRC failed to offer the study into evidence. I further conclude that, based on the record, no calculations were done as required to determine the safety of the flare line.

I also disagree with Mr. Rodante's opinion that the PW and Belzona repairs were acceptable, effective and properly assessed by WRC. Mr. Roderick testified that after the results of the flare line tests were presented, he and Messrs. Chilton, Gentry, Harris and Long all discussed different options for repairing the line; he said that all these individuals were "very comfortable" with using PW to repair the leaks and that PW had been used many times before at WRC for repairs. Mr. Roderick further testified that when the PW repairs began leaking, Belzona was considered, that is, someone in engineering "talked to the Belzona people, got some information on the compatibility of Belzona with [HF] acid, hydrocarbon, and related that information back to [management]." (Tr. 826-28).

Contrary to Mr. Roderick's testimony, Mr. Long testified he was not contacted or consulted before the use of PW or Belzona; he further testified he looked up PW on the internet and concluded it would not resist HF acid. (Tr. 97, 103-05). Mr. Chilton testified that WRC had information from two companies indicating PW could be used for repairing pipeline leaks; he agreed, however, that within two to three months of the June 2004 PW repair to the flare line, management knew PW was ineffective because it could not withstand HF acid. Mr. Chilton further testified that around February 2005, Mr. Harris's group researched Belzona and contacted its salesman, who indicated he had had good success in repairing HF acid leaks; Mr. Chilton said the Belzona repairs, which began in late

²⁵Mr. Harris testified that flare lines can go "very thin," due to the normal pressure of 50 PSI they see. (Tr. 334-35). Also, Mr. Chilton testified there was "no issue" in his mind the flare line could withstand the pressure it saw, as long as the holes in the line were patched. (Tr. 232). However, Mr. Harris agreed with Mr. Long in the September 2005 meeting that parts of the flare line required replacement, and Mr. Chilton conceded that the leaks compromised the mechanical integrity of the line. (Tr. 207, 256-57, 321-22). Further, Mr. Roderick himself admitted there was disagreement among management as to whether the flare line was below minimum thickness and whether it could withstand the pressure it saw. (Tr. 852-54).

2005, were “partially effective” but tended to leak around the edges. (Tr. 155-61, 181-82, 267-68). Mr. Gentry testified the mechanical engineers, or maintenance people, would have discussed the repair issues with representatives of PW and Belzona. (Tr. 583). Mr. Gentry and Mr. Chilton were unaware of any internal engineering report or analysis done as to the effectiveness of PW or Belzona repairs on the flare line. (Tr. 159, 192-94, 583).

Mr. Harris testified it was generally a maintenance function to recommend repairs and that when he did not have enough information he would have his mechanical engineers look at available options. As to PW, his supervisor told him the facility’s prior owner had used it for flare line repairs, and Mr. Harris decided to try it, although he did not know if it had been used for Alky Unit flare line repairs before; Mr. Harris said the PW repairs were not effective because they would not hold up to the acid in the line.²⁶ As to the Belzona, Mr. Harris noted that Don Ward, a maintenance employee, did some research and then spoke to Belzona representatives, who indicated Belzona had been used successfully in similar repairs.²⁷ Mr. Harris also noted that Belzona had been used before as an acid repair at WRC during a turnaround. Mr. Harris stated that the Belzona repairs were temporarily effective but, even with those repairs, the line still had leakage problems. He also stated that his department did no calculations to determine whether the flare line’s integrity could be maintained with the PW or Belzona repairs; further, he did not review the API codes to learn whether such repairs were appropriate for the Alky Unit flare line. Mr. Harris believed the Belzona repairs could withstand surge pressure, or over-pressure, that might occur on the line, but his preference was to replace the line. (Tr. 300-02, 328-31, 340-45, 357-61).

Based on the foregoing, I find that WRC did not properly assess the PW and Belzona repairs and that these repairs were not acceptable or effective. First, it is clear that Mr. Long was not even consulted and that it was up to Mr. Harris’s group to come up with repairs. Second, Mr. Harris

²⁶Mr. Harris indicated that at least some of the repairs were done by other companies, one called Furmanite and another called Leak Repair; these repairs, which were temporarily effective, were done by putting a material similar to PW on the line and clamping it in place. (Tr. 349-53).

²⁷Mr. Harris indicated the Belzona repairs that were the most successful were done by welding the patch or plate in place, which he believed to be the better repair method. However, since WRC management would not allow maintenance to shut down the Alky Unit for welding, the clamping or strapping method was used. (Tr. 336-45, 358-61).

admitted he decided to use PW, despite not knowing if it had ever been used for Alky Unit flare line repairs before; in view of Mr. Long's testimony, WRC should have known the PW could not withstand the HF acid, and, in any case, WRC became fully aware of this fact within two to three months of the June 2004 repair. Third, despite this knowledge, WRC continued using PW, and in February 2005, Mr. Harris's group started looking into Belzona. Even after it was learned that the Belzona repairs were most effective if the patches or plates were welded, WRC would not allow the line to be shut down for welding, and the repairs were done with the less-effective clamping method. Fourth, the Belzona repairs did not start until late 2005. (Tr. 159-60). *See also* footnote 11, *supra*. Fifth, WRC did not do any analysis or calculations to determine the effectiveness of the PW and Belzona repairs and whether the line's integrity could be maintained with those repairs.

Finally, I disagree with Mr. Rodante's opinion that the accident was unforeseeable. One need only compare Mr. Rodante's testimony about what he believed was the cause of the accident with that of Wesley Walker, the technician who reported the pressure excursions in the Alky Unit that occurred in March or April of 2006, to conclude the accident was foreseeable. It was unclear from Mr. Walker's description about what he and the operators feared might happen if that scenario was exactly the same as the one Mr. Rodante described. (Tr. 462-67, 474, 899-909). However, the two scenarios were strikingly similar, and Mr. Walker indicated as much. (Tr. 483). As he put it, "any time you have a release like this, and if your flare header is – the integrity is not good ... then that just increases your risk of what's – a bad situation may be worse." (Tr. 483). I find, therefore, that the accident was foreseeable; this finding is supported by the fact that WRC never mentioned Mr. Walker's testimony about the pressure excursions in its post-hearing filings. I further find that WRC failed to ensure the mechanical integrity of the flare line, as required. This finding is supported by Mr. Rodante himself, who admitted that the accident caused at least six breaches in the piping; he also admitted that, based on his understanding, the area where the vapor cloud escaped, and where the flare line compromised, was near the depropanizer tower and within the area of the line that Mr. Long had recommended for replacement. (Tr. 908-09, 927-30). Mr. Harris confirmed that the part of the line he wanted to replace encompassed this same area. (Tr. 327-28).

In attempting to defend against the alleged violation, WRC elicited testimony from several WRC employees indicating that what happened was an abnormal event and that such a release had

not taken place for many years.²⁸ (Tr. 235-36, 481-83, 556-57). However, Mr. Ray, WRC's safety manager, testified that there is always the potential for a large relief valve release. (Tr. 506-07). In any case, based on the record as a whole, the fact that such a release had not occurred for many years does not persuade me that there was no violation of the standard.

WRC also criticizes OSHA for not performing any engineering studies to determine the cause of the accident and asserts that the CO's conclusions about the accident were speculative. (R. Brief, pp. 6-7). As indicated in the background section, CO Perkins testified the accident was due to operating the Alky Unit with equipment deficiencies; operators were venting pressure excursions in the depropanizer by manually venting the overhead accumulator to the flare line to control the pressure released to the line, causing the depropanizer to over-pressure and release to the flare line, which blew out a Belzona repair on the line and released a vapor cloud that encountered an ignition source and ignited. The CO also testified that the flare line blew out in the area where the depropanizer dumped into the flare line and that that area had had multiple repairs. The CO said that he based his determinations on refinery work orders and on interviews with the unit operators and Mr. Howard; he also said that Photos C-17L, N, S and W showed where the Belzona repair was missing from the bottom of the flare line. (Tr. 682-90, 700-01, 705, 712-14).

As a preliminary matter, I note that the CO's description as to what happened is substantially the same as that of Mr. Rodante; they had different opinions, however, about where the line blew out. The CO concluded the line blew out where the depropanizer dumped into the flare line, as

²⁸As noted above, Mr. Rodante opined the accident was caused by a large amount of liquid entering the flare line and that the line was not designed to handle liquids. Mr. Gentry agreed with Mr. Rodante. (Tr. 591-92). The Secretary's expert, Hisham Hashim, a metallurgical engineer with 27 years of experience with Conoco-Phillips ("C-P"), testified C-P designed the HF alkylation system and flare line that WRC used and licensed it to WRC. (Tr. 615-18, 656). Mr. Rodante verified this was the case and that WRC followed C-P's licensing specifications. (Tr. 899, 902). Mr. Hashim said that one of his responsibilities was to specify the materials used in C-P's HF alkylation system. He also said that liquid is always present in the flare line contents and that besides HF acid, the flare line can contain hydrocarbons; he noted that the purpose of the flare line is to release any hydrocarbons from any vessel upstream in case of over-pressurization and that the line can contain "just about anything that the unit has in it." (617-18, 630-31, 638, 655-56). After considering Mr. Hashim's qualifications and his familiarity with the subject HF alkylation system and flare line, his testimony is credited. The testimony of Messrs. Rodante and Gentry, that the flare line was not designed to handle liquids, is rejected.

shown in C-17W, while Mr. Rodante concluded the release occurred in two of the breaches he identified, which were 12 and 16 feet, respectively, of where the depropanizer dumped into the flare line. (Tr. 712-13, 928). The CO and Mr. Rodante both testified that they spoke to the Alky Unit operators to arrive at their respective conclusions. (Tr. 713, 902-03). The CO, however, testified that he also reviewed WRC's work orders and spoke to Mr. Howard, the Alky Unit supervisor, who told him that the area where the depropanizer dumped into the flare line had been repaired a number of times. (Tr. 543-44, 713-14). Moreover, Mr. Howard and Mr. Gentry both indicated the flare line failed where the depropanizer dumped into the line, in an area that had been repaired before. (Tr. 556, 591-92). Finally, Mr. Rodante never actually stated that he believed the CO was wrong about the area of the line that blew out; rather, he testified that OSHA's belief about what happened was not "as clear as [the CO] has described it." (Tr. 922).

I observed the CO's demeanor as he testified and found him to be a credible and convincing witness. Further, in view of his testimony, the CO's investigation into what caused the release and fire appeared to be quite thorough and based on his observations and photographs as well as his review of WRC's documents and interviews of employees with knowledge of the relevant events.²⁹ I also observed the demeanor of Mr. Rodante as he testified, and while I found him credible in some respects, significant parts of his testimony were inconsistent with other witness testimony. For example, his testimony *supra*, about how WRC assessed the PW and Belzona repairs, and how WRC's engineers performed calculations regarding the flare line, was contrary to the testimony of WRC employees such as Messrs. Chilton, Gentry, Harris and Long. In addition, his testimony that the flare line was not designed to handle liquids was simply incorrect, in view of the testimony of Mr. Hashim. *See* footnote 28. I also find it significant that Mr. Rodante failed to mention the pressure excursions in the Alky Unit that Mr. Walker described. This failure, as well as some of his testimony about what WRC told him, persuades me either that Mr. Rodante did not receive "the full story" from WRC or that he specifically omitted evidence that was contrary to a conclusion that WRC did not violate the standard. I therefore credit the testimony of CO Perkins over that of Mr. Rodante to the extent there are differences in their testimony. Accordingly, I find that the area of the line that

²⁹I note that although this was his first refinery inspection, CO Perkins was accompanied by another CO who was experienced in refinery inspections. (Tr.728-30, 747-48).

blew out was where the CO indicated it was. I also find that, even if the line blew out where Mr. Rodante indicated, the record shows, and Mr. Rodante admitted, that this was within the area of the line that Mr. Long had recommended for replacement. Based on the evidence of record, the Secretary has shown that WRC did not comply with the terms of the cited standard.

Whether Employees had Access to the Violative Condition

WRC contends there was “no evidence regarding an actual exposure” in the record. (R. Brief, p. 2). However, CO Perkins testified that one of the operators, John Kessler, who was on top of the overhead accumulator venting to the flare line at the time of the accident, was treated for HF exposure at an area hospital; he further testified that the nebulizer treatment Mr. Kessler received to clean his lungs was a recordable injury according to OSHA.³⁰ (Tr. 742-43). WRC suggests the CO’s testimony about this incident was a “rumor.” (R. Brief, pp. 2-3). Regardless, I have already found the CO to be a reliable witness, and I find his testimony, which was based on what Mr. Kessler told him, to be credible and convincing. I find, therefore, that Mr. Kessler suffered an actual exposure to, and injury from, HF acid on the day of the accident.

I further find that other employees had access to the HF acid and flammable vapor release on the day of the accident. Commission precedent is well settled that to prove access, the Secretary must show that employees “while in the course of their assigned working duties ... will be, are, or have been in a zone of danger.” *Gilles & Cotting, Inc.*, 3 BNA OSHC 2002, 2003 (No. 504, 1976). While the technician and operators who were on shift left the scene prior to the fire, they clearly had been in a zone of danger; as noted above, Mr. Kessler suffered an HF exposure injury. In addition, the record shows that employees from Furmanite were at the site that day to put a clamp on an area of the flare line on the north side of the Alky Unit; they were attending WRC’s safety orientation when the fire began but would shortly have been in a zone of danger. (Tr. 752-53, 785-86, 805-06). Moreover, the CO testified that a videotape WRC provided OSHA showed that the vapor cloud from the release traveled to an adjacent area called the sulphur recovery unit and that employees were in that area.³¹ (Tr. 722-23). These employees were thus also in a zone of danger. While only Mr.

³⁰The CO noted that Mr. Kessler said he had “burning” in his lungs. (Tr. 743).

³¹The CO said the videotape was from one of WRC’s surveillance cameras. (Tr. 722-23).

Kessler suffered an injury, I find that all of the noted employees had access to the hazard of the HF acid and flammable vapor release, pursuant to Commission precedent.

Finally, I find that employees at WRC had access to the cited hazard prior to the day of the fire. The CO testified that due to the condition of the flare line, from June 2004 on, employees such as technicians, operators and maintenance workers were exposed to possible releases from the flare line. (Tr. 721-23). The background section in this case, set out *supra*, shows there were numerous leaks in the Alky Unit flare line from June 2004 to May 12, 2006. Any leaks from the flare line were presumed to contain HF acid, and there were instances of employee access or exposure to leaks, drips, and sprays from the line. (Tr. 127, 163, 221, 302, 467, 504-05, 517, 521-24, 529-33, 536-38, 855). Employees who worked in the Alky Unit's acid area were required to wear PPE, including face shields, slicker coats and rubber gloves, whether there were leaks in the flare line or not. (Tr. 128, 233-34, 545-46, 855, 864). Regardless, the record shows that releases from the flare line could travel, as happened in this case, thereby potentially exposing employees without PPE to HF acid. (Tr. 533, 537-38, 722-23). Employees were also exposed to the hazard of fire; the fire in this case was very large, burning for seven days, and Mr. Walker's testimony shows such a fire could have occurred before May 12, 2006. (Tr. 483-84, 786-87, 797-800). *See also* Photos C-18A-D, R-18. In light of the record, the Secretary has demonstrated employee access to the cited hazard.

Whether WRC had Knowledge of the Violative Condition

As noted above, to establish knowledge, the Secretary must show that the employer either knew, or could have known with the exercise of reasonable diligence, of the violative condition. I find that WRC had actual knowledge of the violation in this case.

WRC's process safety information relating to the mechanical integrity of the Alky Unit flare line was contained in C-3, WRC's Inspection Manual, which, as noted *supra*, sets out a minimum acceptable thickness of .22 inches for process piping that is from 10 to 20 inches in diameter. *See* C-3, p. 37. Mr. Ray, the safety manager, testified C-3 was meant to comply with the mechanical integrity provisions of the PSM standard, and Mr. Chilton, the manager of technical services, agreed this was so. (Tr. 141-44, 489-90). Further, C-3 specifically states that the methodology used for evaluating the existing process piping systems, like the flare line, met or exceeded the requirements of API 570 (covering the inspection, repair, alteration and rerating of piping systems) and API 751

(addressing the safe operation of HF acid alkylation units). *See* C-3, p. 10, H.3.c. *See also* C-14 and C-16. Consequently, as noted above, C-3 had precisely the information contemplated by 29 C.F.R. 1910.119(d)(3), and Mr. Long properly relied on C-3 to define the acceptable limits for the mechanical integrity of the Alky Unit flare line piping.

C-3 shows that besides Mr. Long, each manager, *i.e.*, Messrs. Roderick, Chilton, Harris, Gentry and Ray, also had a copy of the Manual. In addition, C-3 states in relevant part on page 1, in the section captioned “Statement of Authority,” as follows:

The Chief Refinery Inspector has the authority to stop any activity which violates any rules or regulations of the jurisdiction or any provisions of this manual. Resumption of the activity shall not proceed until all discrepancies have been corrected.

If any difference of opinion between the Inspection Department, Engineering Department, Maintenance Department, or Operations Department, etc. arise and cannot be resolved, the difference will be brought to the attention of the Plant Manager by the Inspection Department. The final decision shall not compromise the applicable code(s) or rules and regulation of the jurisdiction.

The Statement of Authority was signed by Mr. Roderick on March 9, 2001. Thus, it is clear that WRC’s management, including Mr. Roderick, not only knew of the piping specifications in C-3 and that C-3 was intended to comply with the PSM standard; it also knew that Mr. Long was to bring any violative conditions to management attention and to “stop any activity which violates ... any provisions of this manual.” It is also clear from the record that WRC’s management was aware of leaks in the Alky Unit flare line as early as June 2004; in addition, it knew of thinning problems in the line by February 2005 and knew of further thinning problems by September 2005.

The background section set out *supra* shows that WRC’s management learned of a leak in the Alky Unit flare line in an operational meeting in June 2004.³² The leak was repaired on June 14, 2004, with PW and a clamp, and another leak in the line was repaired on September 20, 2004, in the same manner. Due to these and other leaks, Mr. Long hired a contract inspector to test the flare line; that testing revealed 12 places on the line that were at or below the retirement thickness of .22 inches set out in C-3. Mr. Long reported the testing results to management in the maintenance meeting on

³²Operational, maintenance and other managers were at the meeting, and Mr. Long said the Alky Unit supervisor “most likely” would have reported the leak. (Tr. 43).

February 11, 2005, and he recommended replacing certain parts of the line at the meeting.³³ No one questioned the test results, but no decision was made and the line continued to have leaks. Mr. Long took further thickness readings of the line on September 20, 2005, of areas near where the temporary repairs had been made; his readings, which showed more corrosion and metal loss, were from .07 to .23 inches. He reported his findings in the maintenance meeting that day and again recommended replacement of part of the line; Tom Harris, the maintenance and construction manager, and Mr. Stubblefield, the maintenance superintendent at that time, agreed with Mr. Long, but Mr. Gentry, the operations manager, stated it was economically infeasible to shut down and replace the line. During September 2005, the maintenance department began making a new line for the area that Mr. Long had recommended for replacement; the new line was completed by late 2005 or early 2006.

The background section also shows that WRC's management knew that the PW and Belzona repairs were not effective and that the line required replacement well before May 12, 2006. WRC determined that PW was ineffective, as it could not withstand the HF acid, and although WRC then began making repairs with Belzona, the line continued to have leaks, including in previously-repaired areas; further, PW was still used for some repairs.³⁴ In the fall of 2005, operators in the Alky Unit area began to request of Mr. Howard, their supervisor, that the line be replaced due to the leaks and drips that were occurring. On December 16, 2005, at WRC's monthly Health and Safety Committee meeting, the first item on the minutes of that meeting stated: "Alky flare leaks continue." Attendees at that meeting included Messrs. Gentry, Howard, and Ray. In early March 2006, Mr. Howard put up caution tape under an area of the flare line to warn employees, as that area had had leaks and had been repaired several times; in early May 2006, caution tape was put up under another area of the line. In March or April 2006, Mr. Walker went to a 1:00 p.m. maintenance meeting to report pressure excursions on the Alky Unit the night before. Mr. Walker reported that the pressure

³³The record shows the managers at the maintenance meetings would have been, among others, Messrs. Chilton, Gentry, Harris, Ray and Roderick. (Tr. 73, 89, 395-96, 562).

³⁴As noted *supra*, Mr. Chilton admitted that within two to three months of the June 2004 repair to the flare line, management knew PW was ineffective because it could not withstand HF acid. He also admitted that while the Belzona repairs, which began in late 2005, were "partially effective," they tended to leak around the edges. (Tr. 155-61, 181-82).

had gotten high and that he and the field operators had been worried about controlling it; they were concerned a relief valve on the bottom of the depropanizer on the unit would relieve and go to the flare line, which had reduced integrity due to the patched holes on it, and that such a release could result in a fire or in someone being overcome by HF acid vapor. Mr. Walker also reported that a spray or mist from the line, near where the ARN went into the line, had contacted an operator's PPE.³⁵ At the meeting, Mr. Carter, the maintenance superintendent then, said they were looking into a different type of patch for the line and were working out a plan for replacing the line. However, notwithstanding Mr. Carter's statement, the line was still operating on May 12, 2006.

At the hearing, Mr. Long testified that despite C-3, which gave him the authority to stop any activity that violated the provisions of the Manual, he had not been able to fulfill his authority in regard to the flare line piping. He explained that if it had been up to him, he would have shut down the line in February 2005, when he first recommended replacing part of the line. He noted, however, that he did not actually have that authority and that the decision about the flare line "came at a higher level." (Tr. 121-22). WRC managers who testified indicated that the ultimate decision about shutting down the flare line belonged to Mr. Roderick, the refinery manager, and Mr. Roderick himself conceded as much. (Tr. 323-24, 527, 586-87, 840-42). Based on the record, I find that WRC's managers, including Mr. Roderick, knew of the requirements of C-3 and the cited standard; WRC management also knew of Mr. Long's authority pursuant to C-3 and disregarded that authority. I further find that WRC's managers, including Mr. Roderick, knew the flare line's condition violated C-3 and the cited standard. A manager's knowledge of a violation is imputable to the employer. WRC thus had knowledge of the violative condition in this case. This item is affirmed.

Whether the Violation was Serious

The CO testified that the cited condition was a serious violation because a release from the flare line could result in a fire, which could cause serious burn injuries or death. (Tr. 711-12). Further, the record shows that a release from the line could result in exposure to HF acid; contacting HF acid can cause severe corrosive burns, and inhaling HF acid vapor can cause lung injuries or a

³⁵As set out above, managers testified about employee access to leaks and drips from the line, and Mr. Roderick himself acknowledged that he had heard of drips from the line getting on the PPE of employees. (Tr. 221, 504-05, 517-24, 529-33, 536-38, 855).

person to be overcome. (Tr. 157, 467-68, 533, 537-38, 709, 722-23, 742-43). In view of the record, the violation is affirmed as serious.

Whether the Violation was Willful

Commission precedent is well settled that a willful violation is one “committed with either intentional disregard of or plain indifference to the requirements of the Act or a standard.” *J.A. Jones Constr. Co.*, 15 BNA OSHC 2201, 2209 (No. 87-2059, 1993) (citation omitted). A willful violation may be found where an employer was aware of the cited standard’s requirements and was on notice that violative conditions existed. *Id.* An employer’s good faith efforts to correct a hazard, even if not entirely effective, can negate willfulness; however, whether an employer acted in good faith is an objectively reasonable test. *Id.* Thus, if an employer’s measures to address a hazard were to maintain production rather than a genuine effort to abate the hazard, the violation will be found to be willful. *See, e.g., Coleco Indus.*, 14 BNA OSHC 1962, 1967-68 (No. 84-546, 1991).

As a preliminary matter, I address WRC’s contention that the citation was issued as willful due to the fire that occurred; in this regard, WRC asserts the CO did not tell anyone the Alky Unit needed to be shut down or that it was an imminent danger when he was there on May 9 and 10, 2006. The CO agreed this was so. (Tr. 729-31, 747-48). The CO’s testimony, set out above, was that he held an opening conference and attended WRC’s required safety orientation on May 9, that he conducted his walk-around inspection on May 10, and that he observed certain conditions, including: areas of the flare line where repairs had been made and corrosion was ongoing, an area where a barricade had been set up under a section of the flare line, and another area where Mr. Ray told him a blowout had occurred the day before. The CO also testified, however, that he did not finish his inspection on May 10, that he had not been allowed to see all areas of the flare line, and that he had not reviewed any of WRC’s paperwork that day.³⁶ (Tr. 659-676, 716-18, 729, 772-73). In addition, the CO said the requirements for an imminent danger order were different from those for a willful citation; for an imminent danger order, a CO must have all the facts about the hazard and detailed knowledge of employee exposure, such that it can be concluded that employee exposure to the

³⁶In particular, the CO noted that he had not been allowed to enter the acid area of the Alky Unit, where the depropanizer dumped into the flare line, on May 10, 2006. (Tr. 772-73).

hazard could lead to imminent death. (Tr. 717). Based upon the CO's testimony, and my previous findings as to his credibility, the CO's testimony is credited and WRC's contention is rejected.

Turning to the willful classification, in my view, the evidence of record set out *supra* in this decision is sufficient to show that WRC acted with intentional disregard of or plain indifference to the requirements of the Act and the cited standard. In particular, I note the evidence set out in the discussion relating to knowledge and my findings therein. However, there is additional evidence in the record that supports the finding of a willful violation.

The CO testified that one reason for the willful classification was the fact that WRC had both a management of change ("MOC") policy and a temporary repair procedure ("TRP") that, if followed, would have resulted in appropriate action as to the flare line. He said that MOC was part of the PSM standard and required the employer to "manage" repairs in order to know the feasibility of using such repairs on a continued basis before making replacements in kind. He also said that both the TRP and MOC policy required WRC to document the technical basis and duration of the repairs it made and that WRC did not follow either its TRP or MOC policy. (Tr. 718-21).

WRC's MOC policy and TRP were admitted as C-12 and C-13, respectively. As to C-13, Mr. Chilton testified that the TRP applied to all temporary repairs made to the Alky Unit flare line, and Mr. Ray testified the TRP was intended to ensure any leaks were dealt with in a safe and timely manner. (Tr. 197, 493). As the Secretary notes, using the TRP would have ensured that WRC's management evaluated and documented the soundness of any temporary repair method and would also have required both the maintenance department and the facility's inspector to approve and sign off on the temporary repair performed. However, Messrs. Long, Chilton and Ray all admitted that the TRP was not used for the repairs made to the flare line. (Tr. 97-105, 200, 496). As to C-12, the record shows that WRC's MOC policy applied to the temporary repairs made to the flare line.³⁷ (Tr. 111-13; C-16, p. 12). Like the TRC, the MOC policy would have required the review, documentation and approval of those repairs. Again, however, the record shows that WRC did not follow its MOC

³⁷Two WRC managers indicated they did not believe that the MOC policy applied to the repairs made to the flare line. (Tr. 211, 581). However, these same managers agreed they testified to the contrary at their respective depositions. (Tr. 213, 582-83). I find that the MOC policy did in fact apply to the repairs made to the flare line.

policy in regard to the temporary repairs to the flare line. (Tr. 215, 581). I find that WRC's failure to follow its TRP and MOC policy supports the finding of a willful violation.

I also find that WRC's failure to heed the recommendation of Mr. Long and others to replace the deficient parts of the flare line was due to its concern about production rather than a good faith belief that its repairs made the line safe to operate.³⁸ It is clear from the record that WRC anticipated replacement, in that its maintenance department began making a new line in the fall of 2005. However, the new line was finished by the end of 2005 or the beginning of 2006, and there is nothing in the record to persuade me there was any valid reason, other than loss of production, to postpone installing the new line. WRC managers indicated that there were problems associated with shutting down the line, *i.e.*, shutting down the line affected the entire facility, and there was a lack of storage for the feed at the facility. (Tr. 248-49, 573). WRC managers also indicated that the line had to be reinforced by additional repairs so that it could withstand a shutdown. (Tr. 186, 409, 416-17, 588). Regardless, the record shows the line was in worse condition by May 2006. (Tr. 354, 409, 420-23, 576, 587-88; C-1, C-9). Further, Mr. Chilton admitted that the intent was to continue operating the Alky Unit and flare line until the next turnaround, which was scheduled for 2008; he also admitted that the decision to shut down and replace the line in May 2006 was due to its condition. (Tr. 189-90, 247). Moreover, Mr. Gentry acknowledged that, when Mr. Harris recommended replacement of the line in the September 2005 meeting, his response was that that was "economically infeasible." (Tr. 322, 571). I conclude that WRC's concern about production was the overriding reason for its failure to replace the flare line in a timely manner.

Finally, I find that, as the Secretary contends, even by the day of the fire WRC had not finalized its plans to shut down the Alky Unit and replace the deficient sections of the flare line. The record shows the actual decision to shut down was not made until May 2006. (Tr. 215, 247, 326, 354, 417, 454, 526, 586, 841). Further, C-9, an e-mail Mr. Roderick sent to the company's marketing office at 6:21 a.m. on May 12, 2006, states: "We have to shut the Alky unit down to repair the flare

³⁸Almost all of the WRC employees who testified said that they did not believe the line was unsafe and never thought it would blow out as it did. (Tr. 249-53, 353-54, 408-09, 450-53, 549-50, 785, 811, 814, 839). I do not find this testimony convincing, in light of the record as a whole, and, in particular, Mr. Walker's testimony about the pressure excursions that occurred in the Alky Unit in March or April of 2006.

line. We are working on a plan, today.” C-9 also indicates that feed would be out of the Alky Unit on Sunday (May 14th), that blinds and purging would be done on Monday (May 15th), that the maintenance work would take six days, and that the startup would take two to three days. C-9 then goes on to discuss storage of the feed, and concludes by stating: “We will continue to finalize our plan for the shutdown today.” (Tr. 841-42). The only other written evidence of the shutdown was C-10, which Mr. Harris and Mr. Roderick described as a bar chart developed by the maintenance department showing the time needed for the flare line replacement and other repairs within the Alky Unit. (Tr. 347-48, 842-44). Mr. Chilton indicated paperwork would not have been necessary to effect the shutdown, other than a schedule of the events to occur, but Mr. Gentry indicated he would have expected Mr. Howard, the unit supervisor, to have issued a written procedure for the shutdown; to his knowledge, there was no such written procedure by noon on May 12, 2006. (Tr. 216-17, 588-91). Mr. Howard testified he had not started the written procedure before the fire because he had wanted to make sure he had all the details he needed before writing it. (Tr. 540-42).

As set out in footnote 13, *supra*, Mr. Long testified the decision to shut down the line was made the Monday before the fire. (Tr. 94, 132-33). Mr. Chilton, the technical services manager, testified the decision was made “within that week before the fire,” while Kevin Beam, a maintenance planner, testified it was made “the week before the fire.” (Tr. 247, 417). Mr. Harris, the maintenance manager, and Mr. Gentry, the operations manager, testified the decision was made after OSHA began its inspection, and Mr. Howard, the Alky Unit supervisor, testified it was made one to two days before the fire. (Tr. 326, 526, 586). Mr. Roderick, the refinery manager, first testified he made the decision “sometime the week or so before May 12.” (Tr. 841). He said he did not recall if it was before or after OSHA began its inspection, and he then said it was “sometime in the week or so prior to May 12.” (Tr. 856). I find that the weight of the evidence shows Mr. Roderick made the decision to shut down the line after OSHA arrived. Although Mr. Long said it was made the Monday before the fire, and Mr. Beam said it was the week before the fire, Messrs. Harris, Howard and Gentry all stated that it was after OSHA arrived. Further, the testimony of Messrs. Chilton and Roderick was equivocal; they indicated the decision was made within the week of the fire, which could have been before or after OSHA’s arrival, and Mr. Roderick said he could not recall if the decision was before or after OSHA began its inspection. The evidence in the preceding paragraph also supports a finding

that the decision to shut down the line did not take place until after OSHA arrived. Mr. Roderick did not send C-9, his e-mail about the shutdown, until the morning of May 12, 2006, and Mr. Howard had not begun work on the shutdown procedure before the fire occurred.

Based upon all of the relevant evidence of record, I conclude that WRC was in willful violation of the cited standard. Item 1 of Willful Citation 2 is accordingly AFFIRMED.

Penalty Determination

A penalty of \$63,000.00 has been proposed for this citation item. In assessing penalties, the Commission must give due consideration to the gravity of the violation and to the employer's size, history and good faith. *J.A. Jones Constr. Co.*, 15 BNA OSHC 2201, 2213-14 (No. 87-2059, 1993). Gravity is generally the most important factor. *Trinity Indus., Inc.*, 15 BNA OSHC 1481, 1483 (No. 88-2691, 1992). A violation's gravity depends upon such factors as number of employees exposed, duration of exposure, precautions taken against injury, and the likelihood an injury would result. *J.A. Jones*, 15 BNA OSHC at 2213-14. The CO testified the condition had existed since about June 2004 and that multiple employees were exposed; the Alky Unit had 15 to 20 operators who worked in shifts, there were WRC and contract maintenance employees who worked on the unit, and the vapor cloud on May 12, 2006, traveled into an adjacent area, where other employees were located. He noted that under the circumstances, there was a greater probability of an accident occurring, and that the gravity-based penalty was \$70,000. The CO further testified that a 10 percent reduction was given for history, due to WRC's lack of history of prior violations, that no reductions for size or good faith were given, and that the total proposed penalty was \$63,000.00. (Tr. 721-26). I find the proposed penalty appropriate, and it is therefore assessed.

ORDER

Based upon the foregoing Findings of Fact and Conclusions of Law, it is ORDERED that:

1. Item 1 of Willful Citation 2 is AFFIRMED, and a penalty of \$63,000.00 is assessed.

/s/ _____
Covette Rooney
Judge, OSHRC

Date: August 4, 2008
Washington, D.C.