UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
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WASHINGTON, DC 20006-1246

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SECRETARY OF LABOR
Complainant,
v.

AMOCO OIL COMPANY,
Respondent,

OIL, CHEMICAL, AND ATOMIC WORKERS UNION, LOCAL 4-449,
Authorized Employee Representative.

OSHRC DOCKET NO. 92-0361

NOTICE OF DOCKETING OF ADMINISTRATIVE LAW JUDGE'S DECISION

The Administrative Law Judge's Report in the above referenced case was docketed with the Commission on April 8, 1993. The decision of the Judge will become a final order of the Commission on May 10, 1993 unless a Commission member directs review of the decision on or before that date. ANY PARTY DESIRING REVIEW OF THE JUDGE'S DECISION BY THE COMMISSION MUST FILE A PETITION FOR DISCRETIONARY REVIEW. Any such petition should be received by the Executive Secretary on or before April 28, 1993 in order to permit sufficient time for its review. See Commission Rule 91, 29 C.F.R. 2200.91.

All further pleadings or communications regarding this case shall be addressed to:

Executive Secretary
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Review Commission
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Washington, D.C. 20006-1246

Petitioning parties shall also mail a copy to:

Daniel J. Mick, Esq.
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Room S4004
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Washington, D.C. 20210

If a Direction for Review is issued by the Commission, then the Counsel for Regional Trial Litigation will represent the Department of Labor. Any party having questions about review rights may contact the Commission's Executive Secretary or call (202) 634-7950.

FOR THE COMMISSION

Ray H. Darling, Jr.

Date: April 8, 1993

Ray H. Darling, Jr.
Executive Secretary

DOCKET NO. 92-0361

NOTICE IS GIVEN TO THE FOLLOWING:

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SECRETARY OF LABOR, Complainant, v. AMOCO OIL COMPANY, Respondent.	OSHRC DOCKET NO. 92-0361
OIL, CHEMICAL, AND ATOMIC WORKERS UNION, LOCAL 4-449, Authorized Employee Representative.	

APPEARANCES:

Robert A. Fitz, Esquire
Dallas, Texas
For the Complainant.

James D. Pickett, Esquire
Chicago, Illinois
For the Respondent.

John D. Harris
Texas City, Texas
For Authorized Employee Representative.

Before: Administrative Law Judge Louis G. LaVecchia

DECISION AND ORDER

This is a proceeding brought before the Occupational Safety and Health Review Commission ("the Commission") pursuant to section 10 of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 651 *et seq.* ("the Act").

Pursuant to an employee complaint regarding exposure to hydrofluoric acid, OSHA conducted an inspection of Amoco's refinery in Texas City, Texas, in November and December of 1991; as a result, Amoco was issued a serious citation alleging two violations of the respiratory protection standard set out at 29 C.F.R. § 1910.134.[1] Amoco contested the citation, and a hearing was held on September 24 and 25, 1992.

Background

The east side of Amoco's Texas City refinery consists of several processing units monitored and operated from a centralized control facility. Two of the units produce alkylate, a blend stock for gasoline, by processing olefin and isobutane with a catalyst. One of the alkylation units uses sulfuric acid as a catalyst; the other, referred to as "Alky 3," uses hydrofluoric acid ("HF"). Alky 3, which has been in operation since 1986, contains about one million pounds of HF; approximately 240,000 pounds are stored in the unit, while the rest circulates through it. Although it is connected to other units, Alky 3 is essentially an open-air plant unto itself; about a square block in size, it consists of numerous pipelines joining various parts such as exchangers, accumulators, reactors, storage facilities, and distillation towers, two of which are about 150 feet high. The pipelines on Alky 3 vary from a few inches to several feet in diameter, and there are hundreds of flanges on the unit connecting the pipelines and other parts; the flanges, which are bolted into place and sealed with gaskets, are capable of withstanding 300 pounds of pressure.

Operations personnel operate the unit, detect leaks on it, and prepare it for maintenance. Leaks are detected by the lead-based orange paint on the flanges, which turns yellow when exposed to HF, and by the iron fluoride formation which occurs when HF escapes from the unit. Leaks are also detected by the white smoky fumes which form when HF is exposed to moisture in the air, and suspected leaks are sprayed with ammonia water which will smoke if a leak exists. Small flange leaks are generally repaired by replacing and tightening the bolts. More extensive maintenance requires stopping the flow of material to the equipment to be worked on by closing the block valve to the area, depressuring the

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[1]As amended, items 1a and 1b of the citation allege violations of 29 C.F.R. §§ 1910.134(b)(2) and (b)(11), or, in the alternative, 29 C.F.R. §§ 1910.134(c) and (e)(2).

equipment by venting its contents to a flare system where they are burned off, and freeing the equipment of HF and hydrocarbons by purging it with hot nitrogen. "Bleeder" valves are then cracked open, and if only dry gas escapes, it is vented to the flare system and the equipment is ready to be worked on. Operations personnel prepare a work permit detailing the equipment to be worked on, the preparatory procedures performed, and the protective clothing required for the job. The equipment and permit are reviewed by maintenance personnel and the permit is signed, after which the job is begun.

On February 26, 1991, maintenance workers Williams and Bunker were to install a melamine "blind" between two flanges in a pipeline.[2] The employees wore "Class C" protective equipment consisting of boots, pants, gloves, a jacket and an air-fed acid hood. After Bunker broke into the line, Williams, who was 2 feet away and on the other side of the line, began experiencing HF fumes inside his hood. He and Bunker completed the job, with Williams holding his breath as much as he could and leaving three or four times to get his breath; upon finishing, Williams was nauseated, dizzy and short of breath, and he was given oxygen and gluconate mist at the facility. After going home his condition worsened, and, after being told to do so by a company official he went to an emergency room and was examined by a doctor. He returned to work the next day, but the company doctor forbade him to work on the unit for a month to avoid any further exposure and irritation to his lungs.

The Cited Standards

The respiratory protection standard requires the prevention of atmospheric contamination by harmful substances as far as feasible by means of engineering controls; however, employers are also required to provide respirators when necessary to protect the health of employees. *See* 1910.134(a)(1) and (2). The standards cited by the Secretary in this case provide as follows:

> 1910.134(b)(2) - Respirators shall be selected on the basis of hazards to which the worker is exposed.
>
> 1910.134(b)(11) - Approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respiratory

[2]A blind is installed to isolate a particular vessel or line on the unit.

protection against the particular hazard for which it is designed in accordance with standards established by competent authorities.

1910.134(c) - *Selection of respirators*. Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.2-1969.

1910.134(e)(2) - The correct respirator shall be specified for each job. The respirator type is usually specified in the work procedures by a qualified individual supervising the respiratory protective program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued.

The citations allege employees are allowed to use air-fed chemical hoods in areas where HF vapor is or could be present in amounts at or above the permissible exposure level ("PEL") of 3 parts per million ("ppm"), and that the hoods, which are not respirators and are recommended only when ambient air is safe to breath, are used as respirators.

The Testimony

Terry Wilkins is the OSHA compliance officer ("CO") who conducted the inspection. He testified the hoods used by employees are not respirators, and identified C-8-14 as various types of self-contained breathing apparatuses ("SCBA") approved for use in hazardous atmospheres. He further testified that while he is not an industrial hygienist ("IH"), an OSHA IH was with him for part of the inspection. Neither conducted air sampling, and Wilkins knew of no employees exposed to HF besides Williams; he also did not know the level of exposure Williams received. (Tr. 22-45; 52).

James Williams has been a pipefitter at the refinery for fourteen years and has worked exclusively on Alky 3 for about three years.[3] He testified he had been trained in the properties of HF and in the protective equipment to use, and that he understood the purpose of the aid-fed hoods to be to maintain positive pressure so there was no exposure to vapors. His opinion was that there was no nitrogen purge of the equipment before the February 1991 incident. He believed a valve was leaking, that the line was not completely depressured, and that there was a potential for exposure based on the operator's stating the

[3]Williams is the employee who was involved in the February 1991 incident; he is also the employee who filed the complaint with OSHA. (Tr. 55-57; 63).

line was the "best that he could get it" and that it needed to be blinded. Williams noted that Poole, his supervisor, told him and Bunker the line was ready, but that there was no discussion about safety. He also noted he could have asked for a respirator but that he did not think the exposure would be as bad as it was; he also did not know then that a respirator would fit under a Class C hood, and Class D equipment would have been cumbersome and made the job, which was on the side of a tower, much harder. Williams tried to finish the job quickly because he knew he was being exposed. (Tr. 55-57; 62-63; 67-73; 76-82).

Williams and Bunker were both wearing StaSafe hoods, and to Williams' knowledge Bunker was not exposed. The StaSafe hoods are shorter than the waist-length RespirEx hoods made available after the incident, and Williams has had no problems with them as they keep vapors out better; however, he had another exposure a few months after the February incident when he used a StaSafe hood because all of the RespirEx equipment was dirty, and since then he has refused to use StaSafe hoods.[4] Williams' complaint was based on the use of StaSafe hoods and not on a failure to use SCBA. He believes SCBA is needed when HF vapors are present, but not if all preparatory steps are taken and gauges and bleeders are checked to assure equipment is depressured. (Tr. 63-70; 73-76; 83).

Williams had had minor exposures to HF while wearing a hood before the February 1991 incident but had not mentioned them to his supervisor because he had not been injured. He had also heard of an incident in January 1992 in which OSHA was called to the unit in the middle of the night because workers were believed to have been exposed to HF without proper safety equipment. To his knowledge, no air monitoring is done when lines are broken into; however, a water mitigation system was recently installed on the unit to control releases of HF. (Tr. 59-60; 70; 73-75; 83-84).

Kelly Gleason has been the superintendent of Alky 3 for over a year.[5] He testified that while small leaks are frequent, leaks which can be smelled or seen and might expose

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[4]Williams reported the incident to Kelly Gleason, the superintendent of Alky 3. (Tr. 75; 87).

[5]Gleason was an operations engineer on the unit from 1986 to 1988; before 1986, he was an operations engineer on the sulfuric acid unit. (Tr. 88-90; 164).

an employee to measurable amounts of HF are not because of the unit's extensive leak-testing procedures; however, if such exposure is possible, fresh air is designated.[6] Gleason further testified employees should not be present if there is a quantitative leak, such as one spraying out acid, and that workers receive extensive training in regard to the unit, including training in protective equipment. (Tr. 87-90; 110-11; 195-97).

Gleason identified and discussed various documents. R-8, Amoco's Alky 3 personal protective requirements, was developed from R-6, the personal protective guidelines of Phillips Petroleum, the unit's designer. C-4 is the refinery's respiratory protection policy; according to Gleason, C-4 recommends SCBA only for jobs in HF atmospheres, and operations recommends the minimum protection it believes is required for each job. R-2-3 and R-4, the old-style StaSafe Class C hoods and the new-style RespirEx C Prime integrated hood and jacket, respectively, are not respirators but have air-fed lines connected to regulators which direct air around the head and face to provide cooling and prevent fogging; SCBA gear can be worn under R-2 and R-3 but not R-4. According to Gleason, Class C work includes the initial opening of equipment containing HF, C Prime is to be worn when HF fumes may be present, and Class D clothing, which is a totally-encapsulated supplied-air suit, is used in emergency situations such as ruptured lines or uncontrolled leaks where a blind needs to be installed; Class D is not used when the equipment has been blocked off, depressured and purged. (Tr. 117-18; 122-38; 144-64; 179-81; 189-94; 197-98).

Gleason was aware of two instances of injuries caused by HF since the unit's start-up; one was the Williams incident, and the other was an operator whose ankle was burned when he worked on the unit without proper safety clothing. Gleason was also familiar with the incident in early 1992. The unit had just started up after being shut down for maintenance, and OSHA was contacted due to a concern about whether fresh-air equipment was required for workers tightening bolts; to his knowledge, there was no exposure to HF, fresh-air equipment was made available to those who wanted it, and no citation was issued. (Tr. 138-40; 183-84; 199-204).

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[6]Gleason said that while an HF leak's ppm cannot be determined visually it can be measured with a Drager tube, a device used extensively throughout the refinery. (Tr. 177-78; 186-88).

Jerry Poole has been the Alky 3 maintenance superintendent since the unit's start-up. He testified maintenance looks at the unit and checks gauges and bleeders before working on it, that if there are hydrocarbons or HF in the system no work is begun without operations further blocking or purging it, and that if after these procedures HF is still present either Class D or Class C equipment with breathing air is required. He further testified he looked at the equipment on February 26, 1991 with Williams and/or Bunker after it had been purged for two days, and that while there was a problem with some valves leaking through and a discussion about safety neither indicated a need for SCBA. Poole believed the gas escaping from the bleeders, which he did not recall being white, was hydrocarbon vapor and not HF. No air testing was performed to determine what it was, and there was no procedure in place to do so. (Tr. 204-12; 216-19; 228-32).

Poole said the Class C and C Prime hoods are not respirators; they provide positive pressure and cooling and prevent face shield fogging, and are used when equipment has been purged and checked to make sure there is no pressure or HF. When SCBA is needed, a Scott work unit consisting of face mask, regulator, hose and air supply is provided. According to Poole, the work units fit under Class C and C Prime hoods, although they are tight under the C Prime; he believed the work units had been used under Class C hoods but could recall no specific times this had occurred. Poole said the C Prime hood was made available within a couple months of the Williams incident, and that he knew of no other exposures to HF. (Tr. 214-16; 219-22; 226; 232-39).

Marvin Fletcher, an Alky 3 shift supervisor, has worked on the unit since its start-up. He testified that maintenance requiring equipment isolation is performed daily, and that operations and maintenance verify equipment is safe before it is worked on; valve leakage is rare, but if it occurs operations repeats its procedures and if there is a chance material has not been depressured out of the equipment SCBA is required. Fletcher has had maintenance employees wear SCBA, and if an employee asks for more protection after operations and maintenance supervisors decide what is needed he is not denied it. Fletcher opined that requiring SCBA for all maintenance would have a significant impact on the time for each job. He also opined that air monitoring is unnecessary; there are gauges on the unit, and HF leaving the bleeders can be seen and smelled. (Tr. 245-58; 264-67; 271-73).

Fletcher further testified that blinding is performed after verifying that all materials have been removed from the equipment, and that if an employee smells HF he is to leave the area and get operations to correct the condition or get the needed protection; if an employee contacts HF he is to go to a safety shower which triggers an alarm and results in a supervisor being notified, after which the employee is taken to the safety room and given first aid while waiting for an ambulance or the company doctor. Employees are also required to report any HF exposures to management. The only HF inhalation incident Fletcher knew of was the one involving Williams; he recalled another event in December of 1989 or 1990 in which a refinery fireman was exposed to a release, but he was unfamiliar with the details. (Tr. 250-51; 258-61; 274-78).

Stanley Burt has an M.S. in environmental health and industrial hygiene and is the environmental/safety coordinator for Amoco's crude division; he was the IH at the Texas City refinery in 1991, and part of his job was to monitor employee exposure. He testified HF has very good warning properties, and that it can be detected by smell, sight, and air sampling; it can be smelled at .04 ppm and at 2 ppm, in his opinion, has a very strong odor and can cause irritation of eyes and mucous membranes. Burt identified R-9-10 as the report and results of air monitoring conducted under his direction during a twelve-hour shift on February 24, 1992, when operators were purging the unit and opening bleeders. Burt believed the results, which were significantly below the PEL, were representative of exposures occurring at the unit and higher than those to which maintenance employees would be exposed in normal circumstances. (Tr. 278-97; 309-21).

Burt said the StaSafe and RespirEx hoods are not respirators, but that they are more than adequate when equipment has been successfully blocked, depressured and purged because there is no exposure to HF; in such situations there is no need for SCBA, which can place employees at greater risk, and air monitoring is also unnecessary as nothing is being emitted. Burt identified R-11 as the refinery's respiratory protection program.[7] He noted R-11 provides guidelines for working on the unit, that an HF atmosphere is a prerequisite for SCBA use, and that operations evaluates each situation and determines the protection

[7]R-11 and C-4 are the same document. (Tr. 301).

needed. Burt opined Williams' testimony did not indicate HF exposure, but agreed the refinery's log of injuries and illnesses reflected such was the case. (Tr. 297-307).

Critz Cullen has an M.S. in industrial hygiene and has been the refinery's supervisor of safety and industrial hygiene since 1983. He testified he was familiar with the monitoring Burt performed on Alky 3, and that the results were indicative of safe procedures based on good industry practice. He further testified the StaSafe and RespirEx hoods are not respirators, but that respirators are not needed for maintenance work on Alky 3 systems that have been successfully blocked, depressured, purged and bled; in his opinion, Class C or C Prime equipment is more than adequate for such work, and a respirator would make the job more difficult and cumbersome. (Tr. 324-32).

Critz participated in the development of R-11, and interpreted it to require SCBA for maintenance work on the unit in situations in which there is an HF atmosphere or when equipment preparation cannot be verified. Critz identified R-12 as a June 1990 document of DuPont, one of Amoco's HF suppliers, describing procedures for the safe handling of HF; page 3 of R-12 recommends full protective equipment, including an air-supplied acid hood, for making a first break into equipment, and SCBA if there is potential for exposure to HF above the OSHA PEL. Critz knew of three to four individuals besides Williams who had been treated for respiratory exposure to HF. The incident occurred in December of 1988 or 1989 when firemen responded to a leak; they were treated after inhaling butane, propane and HF 200 feet from the source. (Tr. 333-34; 340-44).

Discussion

Based on the foregoing, the issue in this case is whether Amoco's procedures for the use of SCBA on Alky 3 comply with the respiratory protection standard. Amoco does not dispute the need for SCBA in emergencies such as uncontrolled releases, but contends it is not needed for routine maintenance because its procedures free the equipment of HF prior to such work. Amoco asserts, in essence, that SCBA is not required unless the PEL is exceeded, and that the Secretary has not shown the standard applies to routine maintenance because he presented no quantitative evidence of exposures above the PEL.

As noted *supra*, the respiratory protection standard requires employers to provide respirators when necessary to protect the health of employees. The Commission has held that the duty to provide respirators does not arise only when a hazardous substance exceeds OSHA limits, and that when engineering controls afford inadequate protection respirators must be used. *Snyder Well Serv., Inc.*, 10 BNA OSHC 1371, 1375-76, 1982 CCH OSHD ¶ 25,943, p. 32,511 (No. 77-1334, 1982). The Commission has also indicated that even without testing results demonstrating that the hazardous substance exceeded OSHA limits, a violation may nonetheless be established when it is shown that exposure to the substance resulted in illness or injury. *Gulf Oil Corp.*, 11 BNA OSHC 1476, 1480-81, 1983-84 CCH OSHD ¶ 26,529, pp. 33,819-20 (No. 76-5014, 1983).

It is clear from the record that HF is an extremely hazardous substance which can cause severe injuries or death if contacted, ingested or inhaled. *See* C-2-3, HF material safety data sheets issued by Allied Signal and DuPont. It is also clear that while OSHA conducted no testing and Amoco's testing of one twelve-hour shift showed no HF levels over the PEL, the February 26, 1991 incident resulted in HF inhalation requiring medical treatment. Amoco asserts there was no conclusive proof Williams was exposed to HF. However, based on his symptoms, the treatment he received, and the fact he was prohibited from working on the unit for a month, it can only be concluded that Williams' injury was, in fact, caused by HF vapor inhalation. *See* C-2-3. Amoco's contention that SCBA is required only for emergency situations is accordingly rejected, particularly in light of the evidence regarding the Alky 3 respiratory protection program and how it is implemented.

R-11, which provides for the use of SCBA in HF atmospheres, such as when pipes or flanges are opened, appears to meet the intent of the standard. However, R-8 provides for the use of Class D equipment, which includes SCBA, only in emergency situations, and states that C Prime equipment, which includes an integrated air-fed acid hood and jacket, is to be used for the initial opening of equipment containing HF and for work where HF fumes may be present. The contradictory language in these two documents was clarified by Amoco's management witnesses. They testified, essentially, that SCBA is not required when equipment has been successfully blocked, depressured, purged and bled, but that it is required if equipment is not depressured and there is a possibility of exposure to HF.

Fletcher specifically testified that blinding is performed only after verifying that all materials have been removed from the equipment, and that if an employee smells HF he is to leave and have operations correct the condition or get the needed protection.

It is clear from the record the foregoing procedures were not followed on February 26, 1991. Pursuant to the testimony of Williams and Poole, the line to be blinded was not successfully depressured due to a leaking valve and material was escaping from the bleeders. In spite of this fact, operations apparently did not recommend SCBA, Williams did not request it and Poole did not instruct him to do so. Moreover, even after Williams knew he was being exposed to HF he neither asked operations to correct the problem nor requested SCBA; instead, he completed the job by holding his breath as much as he could and leaving the area several times. Also significant is the fact Williams did not even know at the time SCBA would fit under the hood he was using.

Based on the record, it can only be concluded that Amoco's Alky 3 respiratory protection program, as implemented, does not comply with the standard.[8] This conclusion is supported by the incident in which Amoco firemen responded to a leak and required medical attention after inhaling HF vapor, and by the fact that although Drager tubes are available for measuring HF, no testing is conducted when Alky 3 systems leak or are opened to the atmosphere; it is apparent that without testing it cannot be assured HF concentrations are within safe levels, particularly since the record shows Amoco does not consistently follow its own procedures. Further, while Fletcher and Burt opined that testing is unnecessary because of the gauges on the unit and the fact HF can be seen and smelled, Burt admitted he had heard of bleeders stopping up and gauges plugging up and giving inaccurate readings. (Tr. 322-23).

On the basis of the foregoing, I find the Secretary has established serious violations of 1910.134(b)(2) and 1910.134(b)(11), or, alternatively, 1910.134(c) and 1910.134(e)(2). These citation items were grouped, and a single penalty of $7,000.00 was proposed. After

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[8]That Williams has experienced no exposures with the RespirEx hood does not affect this determination, since it is clear the hood is not a respirator and should not be used as such.

giving due consideration to the employer's size, history and good faith, as well as to the gravity of the violations, the proposed penalty is assessed.

Conclusions of Law

1. Respondent, Amoco Oil Company, is engaged in a business affecting commerce and has employees within the meaning of section 3(5) of the Act. The Commission has jurisdiction of the parties and of the subject matter of the proceeding.

2. Respondent was in serious violation of 29 C.F.R. §§ 1910.134(b)(2) and 1910.134(b)(11), or, alternatively, 29 C.F.R. §§ 1910.134(c) and 1910.134(e)(2).

Order

On the basis of the foregoing Findings of Fact and Conclusions of Law, it is ORDERED that:

1. Items 1a and 1b of serious citation number 1 are AFFIRMED, and a total penalty of $7,000.00 is assessed.

Louis G. LaVecchia
Administrative Law Judge

Date: MAR 29 1993