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Feature Articles

Perspectives On OSHA And Benzene Regulations

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Introduction

Rigorous and conscientious compliance with OSHA regulations exemplifies an employer's interest in worker safety and remains the first line of defense for an employer. Management decisions which involve informed and thoughtful consideration for worker safety benefit the company not only in day to day operations, but in the litigation setting as well. A defendant makes its best appearance at trial where the company witness credibly explains how the company has meticulously complied with the workplace practice and record keeping requirements of OSHA. A company's knowledge of and compliance with OSHA regulations is a critical element in a company's defense in a lawsuit alleging personal injuries from benzene exposure. To assist counsel and management in this line of defense, this article will provide a historical analysis of OSHA, the regulations relating to workplace safety in the use of benzene-related products and will outline strategic defense strategies.

Background - OSHA

On December 29, 1970, President Nixon signed the Occupational Safety and Health Act. Initially nicknamed "the safety bill of rights," the Act charged the Occupational Safety and Health Agency ("OSHA") with insuring health and safety in the workplace for working men and women.

When OSHA opened its doors as an agency in 1971, it covered 56 million workers at 3.5 million workplaces. Today, OSHA has grown to cover 105 million workers at 6.9 million workplaces, and maintains a well-known and recognized standard of workplace safety and health. Working groups impacted by OSHA regulations have expanded beyond strictly industrial environments to include, for example, offices addressing ergonomic injuries and hospitals practicing safer needle practices.

OSHA regulations are designed to protect employees from diminished health, functional capabilities, or life expectancy as a result of their work experience. As part of its process to establish regulatory standards, OSHA is required under 29 U.S.C. §655(b) (5) to develop standards from the application of the "latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other health and safety laws."

OSHA, under 29 U.S.C. §654, mandates obligations to both the employer and employee:

(a) Each employer

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

On May 29, 1971, OSHA published regulations disclosing Permissible Exposure Limits ("PELs"). These standards were based upon consensus recommendations that the Agency was authorized to make during the first two years of its existence. Thereafter, OSHA can issue or modify standards only by adhering to procedural rulemaking provisions delineated in the Act. Such provisions require the issuance of a formal notice including a preamble stating the agency's reasons and evidence supporting the proposal or revised proposal. This notice is called the Notice of Proposed Rule Making ("NPRM") and must be published in the Federal Register.

Public comment is invited and individuals/groups are invited to provide evidence at public hearings. Once all information is received, the agency publishes a final standard based upon the entire rulemaking record. Similar to the NPRM, the agency includes a preamble justifying its scientific basis and reasoning with respect to the standard. Persons adversely affected by the new standard may petition the United States Court of Appeals for judicial review.

In 1983, the OSHA Hazardous Communication Standards became law. They are found at 29 CFR 1910.1200. The purpose of these regulations is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. Communications of hazards are to be accomplished through container labeling and other forms of warning, employee training, and material safety data sheets. This Act requires employers to do the following:

- 1) Maintain Material Safety Data Sheets received and ensure that they are readily accessible to employees during the work shift;
- 2) Preserve existing labeling on all incoming products;

- 3) Evaluate the presence of hazardous chemicals in mixtures;
- 4) Maintain a written hazard communication program;
- 5) Provide training in methods and observations to detect the presence of hazardous chemicals in the workplace upon initial assignment where the chemical is used; and
- 6) Provide education and training on work practices, personal protective equipment, and emergency procedures.

Benzene Workplace Standards

Benzene is a clear, colorless, non-corrosive, highly flammable liquid with a strong sweet odor. Benzene is largely produced by petrochemical and petroleum refining processes. Benzene is also a naturally occurring compound in crude oil and natural gas. Industries that use or have used benzene or benzene-containing liquids are numerous and include the manufacture of printed materials, lithographs, rubber cement, rubber, paint, varnish, stain remover, adhesives, leather, and petroleum. It is used in laboratories as a solvent and reactant.

Benzene is classified as a human carcinogen by the Environmental Protection Agency, the American Conference of Governmental Industrial Hygienists and the International Agency for Research against Cancer. Epidemiological and animal studies have demonstrated an association between benzene exposure and hematopoietic diseases including, suppressed production of white cells, red cells, and platelets, aplastic anemia, and acute non lymphocytic leukemia. See, ATSDR Toxicological Profile for Benzene (August 2007). Some studies suggest that benzene exposure is associated with non-Hodgkin's lymphoma and multiple myeloma Rinsky, Robert, *et al. Benzene and Leukemia, An Epidemiologic Risk Assessment*, N Engl J Med., April 23, 1987, at 1044; Hayes, Richard, *et al., Benzene and The Dose-Related Incidence of Hematologic Neoplasms in China*, J Natl Cancer Inst., July 16, 1997, at 1065.

Educating the employer client about its obligations under OSHA with respect to benzene is an invaluable service a defense attorney can provide a client. This is particularly true with smaller, unsophisticated clients who use benzene-containing products in the workplace.

Employer Liability

While workman's compensation laws generally provide immunity to the employer from lawsuits related to workplace injuries, an employer remains liable for injuries to third parties proximately caused the employer or his agents.

The following section provides a brief summary of the obligations required by OSHA with respect to the use of benzene and benzene-containing materials in the workplace. For more information, the complete requirements are published at 29 CFR

§1910.1028.

Prevention

OSHA seeks to avoid workplace disease through two mechanisms 1) engineering methods which control source emissions and 2) the diversion of emissions from the pathway between the source and the worker.

Air Monitoring

The Permissible Exposure Limit (PEL) is the airborne level that a worker can safely be exposed over a working career. The current OSHA PEL for benzene is 1 part per million (ppm) as an eight hour time-weighted average (TWA). A short term exposure limit (STEL) is set at 5 parts per million averaged over any 15 minute period. OSHA has set the action level for benzene at .5 ppm. The action level is the measurement level at which increased industrial hygiene monitoring and medical surveillance are required.

Under OSHA, employers are required to monitor the air during each activity to determine the levels of benzene present in the breathing zone. An employer may discontinue monitoring an employee's activity if two consecutive measurements taken at least 7 days apart are below the .5 ppm action level. At this level, no future measurements need be taken so long as the activities evaluated remain the same over time.

Respiratory Protection

The type of respirator prescribed by the regulations depends upon the airborne concentrations of benzene in the particular environment. Air monitoring must be conducted to identify concentration levels. Employers are prohibited from using respirators as the primary defense against exposure for several reasons:

- a. Benzene has poor warning properties at low levels and filter break through could go undetected;
- b. Respirators are difficult to fit properly;
- c. They cause facial irritation;
- d. Proper training is necessary; and
- e. Compliance is expensive and difficult to enforce.

In accordance with OSHA regulations, respirators offer the least reliable and least consistent approach to exposure prevention. As such, they may be appropriate where non routine work is being conducted, such as equipment maintenance and repair.

Protective Clothing

To limit dermal exposure, the regulations require the employer to provide protective clothing to workers where appropriate to limit dermal exposure to liquid benzene. The clothing must be provided at no cost to the employee. Such items may include face shields, gloves, aprons, coveralls, footwear, and face/eye protection.

Medical Surveillance

Medical surveillance provisions are intended to detect changes in the hematopoietic system resulting from exposure to benzene. The goal of early detection is to identify workers exposed to benzene early enough to promote reversal in some processes and prevent further disease processes by reducing doses to more susceptible workers. Examinations and tests are to be administered by a licensed physician at no cost to the employee. Tests must be analyzed by an accredited lab.

Medical monitoring is required for workers exposed to any of the following conditions:

1. The action level of 0.5 ppm for 30 or more days per year;
2. The PEL of 1 ppm for 10 or more days per year;
3. More than 10 ppm of benzene for 30 or more days in a year prior to the date of the current standard while employed for their current employer; and,
4. Tire machine operators using solvents containing greater than 0.1 percent benzene.

In these instances, employers must provide employees with annual physical examinations complying with Section 1910.1028(i). Such examinations must be performed by or under the supervision of a licensed physician, to include the taking of a detailed history, a complete physical examination, pulmonary function studies (every three years for people required to wear a respirator 30 or more days per year), blood laboratory tests, and additional tests as deemed necessary by the physician.

Pulmonary function studies are not intended to detect past exposure. Instead, they are necessary to determine whether a worker suffers from a pulmonary deficit that may be aggravated by the wearing of a negative pressure respirator.

OSHA also provides for Medical Removal Protection. Paragraph (i) (9)(i) requires an employer to provide up to 6 months of benefits each time an employee is removed because of hematological findings, unless the employee has been transferred to a comparable job.

Hazard Communication

Employers must communicate benzene hazards to employees. Paragraph j requires the use of 1) signs, 2) material safety data sheets, 3) information and training. In locations where exposure risk is over the PEL or STEL, employers are required to post signs stating:

Danger, Benzene,
Cancer Hazard,

Flammable – No Smoking,
Authorized Personnel Only, Respirator
Required.

Similarly, containers must be labeled “Danger, Contains Benzene Cancer Hazard” in accordance with the employers Hazardous Communication program required under 29 CFR §1910.1200(f). OSHA places the burden on the employer as well as the manufacturer, importer, and distributor of benzene and benzene-containing materials to ensure that containers are properly labeled.

In addition to warning labels, the regulations require employers to provide hazard training to their employees at the time of their initial assignment and at least annually thereafter.

Record Keeping

Separate records must be kept documenting worksite releases as well as employee exposure histories and medical surveillance records. The specific requirements of each type of record is described at 29 CFR 1910.1028(k). Exposure records must be maintained for a period of at least 30 years and medical surveillance records must be kept for the duration of employment plus 30 years.

Strategic Defense Considerations

Compliance

In the litigation setting, a thorough and well documented file demonstrating OSHA compliance is persuasive evidence to rebut the frequently made contention that corporations put profits before people. A company should be mindful of how communications are made to its workforce as well as to potential jurors. For example, if a defendant’s workplace air monitoring measurements require it to develop an action plan, the plan should be drafted in language understandable to the lay reader with concluding statements that clearly and persuasively communicate the intended message. Documentation demonstrating compliance with the plan should be kept with the plan and updated regularly. Similarly, engineering projects to control source emissions or divert source emissions should be documented in a form usable at trial. Sensitive communications or confidential information should not be kept in the same place with this documentation to prevent unintentional disclosure during discovery.

The company witness presented by the defendant should be familiar with company efforts to comply with OSHA and be capable of competently explaining compliance efforts using layman’s terms to put the company in the best light.

A Safe Harbor for Mixtures Containing Less Than 0.1% Benzene

OSHA’s regulations specifically exclude the use of mixtures containing less than 0.1% benzene. Studies indicate that liquid mixtures with less than 0.1 percent benzene are unlikely to cause exposures through dermal absorption and inhalation equivalent to the amount inhaled at the action level. For further discussion, see

52 Fed. Reg. 34524-34526 (Final Rule, September 11, 1987).

Instituting practices to assess and restrict benzene use to products containing less than .1% benzene in the manufacturing process are good for worker safety and simplify compliance measures. This exception also provides product manufacturers with a great incentive in a litigation setting to reduce the percentage content of benzene both in substances used in the work environment as well as in products intended for distribution to consumers.

While such practices may not prevent lawsuits, they will put the employer defendant in a much better position at the commencement of litigation.

Regulatory Scheme Not Evidence

At least one court has ruled that the use of OSHA regulations to establish that a product was unreasonably dangerous is improper. *Behanan v. Desco Distrib. Co.*, 98 Ohio App.3d 23, 647 N.E.2d 830 (1994). The *Behanan* court affirmed the trial court's exclusion of inspection and safety records compiled by OSHA to show that a pressing machine was defective. Citing Section 653(b)(4) of the Act, the court found that Congress did not intend for OSHA to be used as a basis for civil liability.

There are good reasons why the OSHA regulations are improper to support causation allegations as well. Section 6(b)(5) of the OSHA Act states that OSHA health standards should create a situation such "that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life." OSHA's directive is to protect workers and its findings are not subject to the same rigors applied to other scientific entities.

In fact, with respect to its standard setting role, the United States Supreme Court ruled, "OSHA is not required to support its findings with anything approaching scientific certainty. . . the Agency is free to use conservative assumptions in interpreting the data with respect to carcinogens, risking error on the side of overprotection rather than under protection." *Indus. Union Dep't v. API*, 448 U.S. 607, 655, 100 S.Ct. 2844, 65 L.Ed.2d 1010 (1980). In a footnote within the same decision, the Court further stated, ". . . while the Agency must support its findings that a certain level of risk exists by substantial evidence, we recognize that its determination that a particular level of risk is 'significant' will be based largely on policy considerations. . . ."

To the extent that courts have admitted OSHA regulations for the purpose of notice to a defendant in a negligence claim, defense counsel should consider moving *in limine* to exclude portions which provide biased statements or conclusions unsupported by the greater scientific literature.

State of the Art

While benzene has been associated with blood disorders for some time, the dose necessary to cause a health risk and the types of diseases associated with benzene exposure continue to be disputed among litigation experts. In many instances, it may be helpful to provide the fact finder with the perspective of the

scientific community at the time of the exposure. This is particularly true in instances where the alleged benzene exposure occurred many years in the past.

The regulations themselves contain a historical section which could be helpful in providing the jury with an outline of state of the art information. For example, the initial voluntary threshold limit set by the ACGIH in 1946 was 100 ppm. The ACGIH reduced this limit the following year to 50 ppm and further reduced again in 1948 to 35 ppm. The TLV remained at this level until 1963 when the ACGIH proposed a 25 ppm threshold limit value. Of significance is the fact that reports of benzene induced blood changes were included in the ACGIH report, but the agency made no mention about a potential association between leukemia and benzene exposure. In 1974, the ACGIH set a level of 10 ppm.

After the passage of OSHA in 1970, the newly formed agency adopted the American National Standards Institute level of standard of 10 ppm. No formal compliance with the rulemaking requirements was necessary for initial adoption of standards under section 6(a) of the Act. OSHA did not propose a reduction in this 10 ppm standard until 1977. However, challenges to this proposed reduction resulted in litigation in the Fifth Circuit, which eventually resulted in review by the United States Supreme Court. The new 10 ppm standard did not become effective until September 1987.

Potential Uses in Low Dose Cases

Due in large part to the U.S. Supreme Court's decision, requiring OSHA to support a PEL reduction with quantitative risk analysis, NIOSH, under lead author Robert Rinsky, reviewed existing exposure and mortality data from the Ohio pliofilm cohort and developed conclusions which were subsequently published in the New England Journal of Medicine (1987).

Among their conclusions, Rinsky's group determined that cumulative benzene exposures totaling less than 40 part per million years yielded a standard mortality ratio (a measure of relative risk multiplied by 100) of 109. Rinsky, Robert, *et al. Benzene and Leukemia An Epidemiologic Risk Assessment*, N Engl J Med., April 23, 1987, at 1046. Subsequent retrospective analyses of the three Ohio pliofilm plants using historical records and interviews with former workers have concluded that Rinsky likely underestimated worker exposures. Williams, Pamela and Paustenbach, Dennis, *Reconstruction of Benzene Exposure for the Pliofilm Cohort (1936-1976) Using Monte Carlo Techniques*, J Toxicol and Env Health, Part A, 2003 at 677-744. This NIOSH sponsored research in conjunction with subsequent studies may be helpful evidence for defendants in buttressing a causation defense.

Conclusion

Employers using regulated chemicals should always strictly adhere to OSHA regulations. The first line of defense should always be prevention. This is particularly important since OSHA violations can potentially involve significant civil penalties and, in some circumstances, 17(e) criminal penalties. Since benzene associated diseases are caused by other factors and substances, the most careful of employers cannot always avoid all personal injury litigation.

In a litigation setting, most jurors are familiar with OSHA and its regulations may carry significant weight with them. It is imperative that product users handling benzene-containing mixtures consult with an industrial hygienist to establish safety protocol consistent with OSHA and that proper records be kept to document compliance. Under such a program, defendants will be better equipped to respond to attacks arising under OSHA.

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