PRIVATE STANDARDS AND THE BENZENE CASE: A TEACHING GUIDE

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Private standards play a central role in the governance of economic activity. They also figure significantly in many public regulations, with more than 17,000 references to private standards contained in the federal regulatory code. Nevertheless, private standards remain largely overlooked in law school curricula. One clear example is Industrial Union Department, AFL-CIO v. American Petroleum Institute *(often referred to as the "Benzene Case"), a 1980 Supreme Court decision that is widely excerpted and discussed in major casebooks on administrative law, regulation, environmental law, and statutory interpretation. The Benzene Case raises several important legal issues, including the nondelegation doctrine, the use of benefit–cost analysis in rulemaking, and the proper standard for judicial review in the face of scientific uncertainty. These traditional issues have been explored thoroughly in both legal scholarship and teaching materials, but the Benzene Case also raises previously unacknowledged questions about the role of nongovernmental actors in the development of private standards which are then incorporated into federal law. In particular, scholars have overlooked the important role that private standards played in the early*

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development of the Occupational Safety and Health Administration's regulatory limits on benzene. Addressing this oversight, we explain in this detailed Teaching Guide how the Benzene Case provides an excellent opportunity for law faculty to introduce students to what private standards are, how they are developed, and the extent to which the government should rely on these standards. Given the ubiquity of private standards today and the extent to which they are woven into the fabric of regulation across a range of substantive domains, it is vital that law students begin to grapple with questions about their proper role in public law.

INTRODUCTION

This Teaching Guide and accompanying materials will help faculty teaching administrative law or environmental law courses to use the Supreme Court's opinion in *Industrial Union Department, AFL-CIO v. American Petroleum Institute*,[1] (often referred to as the "Benzene Case") to introduce the topic of private standards to law students. Private standards differ from regulations in that, as their name suggests, they are developed by nongovernmental entities—standards development organizations or trade associations.[2] Because compliance with private standards is not legally required, such standards are sometimes also referred to as "voluntary" standards.[3]

1. 448 U.S. 607 (1980) (plurality opinion).

2. *See* Emily S. Bremer, *On the Cost of Private Standards in Public Law*, 63 U. KAN. L. REV. 279, 301–02 (2015) (explaining how private standards are developed).

3. The National Technology Transfer and Advancement Act of 1995 refers variously to "technical standards that are developed or adopted by voluntary consensus standards bodies" or

Although private standards have for many years played a vital role in business practices and transactions, as well as in the development of government regulations, they have remained overlooked in most law school curricula. One clear example is the way that leading legal casebooks treat the Benzene Case.[4] The case involves a dispute over a revision to an Occupational Safety and Health Administration (OSHA) rule on workplace exposure to benzene fumes. It has been excerpted or discussed extensively in law school textbooks on administrative law, labor law, legislation, and environmental law. Although excerpts from a number of these textbooks include the portion of the plurality opinion that expressly notes that OSHA had relied on a "national consensus standard" from the nongovernmental American National Standards Institute (ANSI) in setting its initial airborne limit on benzene, none of these leading books explains to students what ANSI is, nor do they provide any background on the meaning of a "national consensus standard" or private standards more generally.[5]

This Teaching Guide uses the Benzene Case to provide a window into the important but overlooked world of private standards. It is suitable for any course in which students will read the Benzene Case.

I. LEARNING OBJECTIVES

This Teaching Guide can be used by instructors specifically to prepare a lesson that will serve any or all of the following three primary objectives:

(1) To introduce students to the topic of private standards (also sometimes referred to as "voluntary standards");

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simply to "private sector standards." National Technology Transfer and Advancement Act of 1995 § 12(d), 15 U.S.C. § 272 note (2012) (section entitled "Utilization of Consensus Technical Standards by Federal Agencies").

4. *Indus. Union Dep't, AFL-CIO*, 448 U.S. at 617–18.

5. For examples of leading casebooks that include a reference to ANSI in connection with the Benzene Case, see STEPHEN G. BREYER, RICHARD B. STEWART, CASS R. SUNSTEIN, ADRIAN VERMEULE & MICHAEL HERZ, ADMINISTRATIVE LAW AND REGULATORY POLICY: PROBLEMS, TEXT, AND CASES 58 (8th ed. 2017); GARY LAWSON, FEDERAL ADMINISTRATIVE LAW 79 (5th ed. 2009); JOHN MANNING & MATTHEW C. STEPHENSON, LEGISLATION AND REGULATION: CASES AND MATERIALS 504 (3d ed. 2017); JERRY MASHAW, RICHARD MERRILL & PETER SHANE, ADMINISTRATIVE LAW, THE AMERICAN PUBLIC LAW SYSTEM: CASES AND MATERIALS 870 (6th ed. 2009); ROBERT V. PERCIVAL, CHRISTOPHER H. SCHROEDER, ALLEN S. MILLER & JAMES P. LEAPE, ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 217 (8th ed. 2018); MARK ROTHSTEIN & LANCE LIEBMAN, EMPLOYMENT LAW: CASES AND MATERIALS 706 (7th ed. 2011); and PETER L. STRAUSS, TODD D. RAKOFF, CYNTHIA R. FARINA, & GILLIAN E. METZGER, GELLHORN AND BYSE'S ADMINISTRATIVE LAW: CASES AND COMMENTS 596 (11th ed. 2011).

(2) To explore how government regulatory agencies rely on private standards; and
(3) To help students reflect on why it might (or might not) be a good thing for the government to rely on private standards.

This Guide can be used flexibly to prepare a lesson that could last as little as ten minutes—for example, as part of an instructor's general introduction of the Benzene Case—or for an entire sixty-minute class session if used to devote more attention to private standards.

II. MATERIALS IN COURSE MODULE

This Teaching Guide is part of a larger course module comprising readings, PowerPoint slides, and videos that may be useful for instructors or their students. The full course module contains:

- **Teaching Guide:** This document.
- **Readings to Assign:**
  - Excerpt from *Industrial Union Department, AFL-CIO v. American Petroleum Institute*.
  - Excerpt from American Industrial Hygiene Association, USA Standard: Acceptable Concentrations of Benzene (ANSI Z37.4-1969) (1969).[6]
- **PowerPoint Slides:** Optional if the instructor chooses to lecture for some or all of the class session.
- **Additional Background Materials:** Available online at www.codes-and-standards.org.
  - American Industrial Hygiene Association, USA Standard: Acceptable Concentrations of Benzene (ANSI Z37.4-1969) (1969) (entire document).

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6. AM. INDUS. HYGIENE ASS'N, ANSI Z37.4-1969, USA STANDARD: ACCEPTABLE CONCENTRATIONS OF BENZENE (1969), https://www.law.upenn.edu/live/files/7776-1969-benzene-standard. [hereinafter BENZENE STANDARD]. Permission was granted to the University of Pennsylvania Law School by the American National Standards Institute (ANSI) to make ANSI Z37.4-1969 available online for educational purposes. But it should be noted that ANSI Z37.4-1969 is an outdated and withdrawn standard and is no longer recognized or supported by the American Industrial Hygiene Association (AIHA). Furthermore, the original copyright holder, the United States of America Standards Institute (USASI), is no longer in business. As a result, ANSI Z37.4-1969 cannot be referred to as an American National Standard, an ANSI Standard, or a United States of America Standards Institute (USASI) standard. We thank Rosemary Maginniss of ANSI for her assistance in locating a copy of this historical standard for us.

- American National Standards Institute, Key Steps (2018).[7]
- Thomas O. McGarity, *The Story of the Benzene Case: Judicially Imposed Regulatory Reform Through Risk Assessment*, in *Environmental Law Stories* (Richard Lazarus & Oliver Houck, eds., 2011).
- Materials from the incorporation by reference course module prepared by Professor Emily Bremer and available at www.codes-and-standards.org.
- Videos available on the website about standards and incorporation by reference.

All of the above materials are available on the Penn Program on Regulation's Voluntary Codes and Standards website, www.codes-and-standards.org.

III. BACKGROUND FOR INSTRUCTORS

Although private standards played an important role in the early development of the OSHA regulation that was being revised in the rulemaking at issue in the Benzene Case, the Supreme Court's opinion does not include any background information on what such standards are, where they come from, or the roles they play in regulation. What information it did provide, interestingly, is incomplete or even mistaken in parts. This Section of the Teaching Guide provides instructors with the background needed to teach students about the role that private standards played in the history of OSHA rulemaking leading up to the Benzene Case, and it then uses this case to provide a more general lesson about how private standards are developed and the role they play in federal regulation.

A. The Benzene Case

We begin with a concise overview of the events leading up to the Supreme Court's decision in the Benzene Case, as well as the references to private standards contained in the Court's plurality opinion. We then discuss a few misleading aspects of the Court's treatment of private standards, and then provide some background as to relevant terminology and the various benzene standards themselves. The material in this Section can serve either as general background information for instructors or as material to present and discuss in class.

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7. AM. NAT'L STANDARDS INST., AMERICAN NATIONAL STANDARD (ANS) DEVELOPMENT: KEY STEPS, https://share.ansi.org/Shared%20Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/ANS_Steps_080818.pdf (last visited March 22, 2019).

Case Summary. In 1970, Congress passed the Occupational Safety and Health Act (OSH Act), which established OSHA and gave it the authority to regulate workplace conditions.[8] In 1971, in response to mounting evidence about the health consequences of benzene (a toxic substance that at the time was primarily used in the production of various organic chemicals), OSHA adopted a regulation that limited concentrations of benzene in workplaces to 10 parts benzene per million parts of air (10 ppm).[9] This rule relied on a growing body of epidemiological research linking exposure to high concentrations of benzene to potentially serious health consequences, including an increased risk of leukemia.[10] The 10 ppm standard was relatively uncontroversial, since most workplaces could fairly easily keep their indoor air exposures to benzene below this level.[11]

In the years that followed, labor unions lobbied OSHA to lower its limit further,[12] but OSHA declined to do so. A separate research agency, the National Institute for Occupational Safety and Health (NIOSH), concluded that the 10 ppm limit was sufficient to protect against leukemia and other health risks.[13] However, in 1976, after the publication of additional research linking benzene exposure to leukemia—and after the election of President Jimmy Carter[14]—NIOSH reversed course, issuing a recommendation that OSHA lower the exposure limit to 1 ppm.[15] In addition, NIOSH informed OSHA that it was conducting an epidemiological study of the link between benzene exposure and leukemia at two Pliofilm plants in St. Mary's and Akron, Ohio, where employees had been exposed to benzene.[16] It also submitted

8. Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651–678 (1994). The Occupational Safety and Health Administration (OSHA) is an executive agency that is part of the U.S. Department of Labor and it is headed by the Assistant Secretary of Labor for Occupational Safety and Health.

9. *See* National Consensus Standards and Established Federal Standards, 36 Fed. Reg. 10,466, 10,503–04 (May 29, 1971); *see also Indus. Union Dep't, AFL-CIO*, 448 U.S. at 617–18; Occupational Exposure to Benzene, 43 Fed. Reg. 5918, 5919 (Feb. 10, 1978) (discussing the history of the 1971 benzene standard).

10. *Indus. Union Dep't, AFL-CIO*, 448 U.S. at 617–18.

11. Thomas O. McGarity, *The Story of the Benzene Case: Judicially Imposed Regulatory Reform Through Risk Assessment*, *in* ENVIRONMENTAL LAW STORIES 141, 154 (Richard Lazarus & Oliver Houck eds., 2011).

12. DAVID M. O'BRIEN, WHAT PROCESS IS DUE? COURTS AND SCIENCE-POLICY DISPUTES 165 (1987).

13. *Indus. Union Dep't, AFL-CIO*, 448 U.S. at 619.

14. *See* O'BRIEN, *supra* note 12, at 165 (discussing the revision of OSHA's benzene standard during the Carter Administration).

15. *See Indus. Union Dep't, AFL-CIO*, 448 U.S. at 619–21.

16. Occupational Exposure to Benzene, 43 Fed. Reg. 5918, 5919 (Feb. 10, 1978).

preliminary findings from the study indicating that there was a five-fold increase in leukemia deaths for workers exposed to benzene compared to the average rate for U.S. males.[17]

In response, in May 1977, the Assistant Secretary of Labor in charge of OSHA issued an emergency temporary rule reducing the benzene exposure limit from 10 ppm to 1 ppm.[18] As the Court's opinion in the Benzene Case makes clear, workers at petroleum refineries would be among the beneficiaries of the protection afforded by this lower limit, while the firms that owned and operated the refineries would bear the costs associated with complying with the temporary rule. The petroleum industry immediately filed for judicial review in the U.S. Court of Appeals for the Fifth Circuit, and the court stayed the temporary standard.[19] OSHA then issued a notice of proposed rulemaking to lower the benzene exposure limit to 1 ppm permanently and to place stringent limits on exposure to liquid benzene.[20] In February 1978, OSHA issued a final rule that permanently lowered the permissible exposure limit to 1 ppm.[21]

OSHA justified its policy change by concluding that benzene is a carcinogen, and, "once the carcinogenicity of a substance has been established qualitatively, *any* exposure must be considered to be attended by risk when considering any given population."[22] OSHA concluded that ideally benzene exposure should be reduced to 0 ppm to safeguard workers' health, but that 1 ppm was the lowest level that was technologically feasible.[23] The agency did not, however, rely on any evidence that lowering the benzene limit below 10 ppm would actually lower the incidence of leukemia.[24] It concluded that the OSH Act did not require it to make a comprehensive analysis of costs and benefits, but rather to achieve the maximum positive impact on worker health.[25]

The American Petroleum Institute (API), the national trade association for the petroleum industry, again filed for judicial review and, in 1978, the Fifth Circuit held that OSHA had exceeded its statutory authority in promulgating its permanent rule because its findings were not supported by the administrative record.[26]

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17. *Id.* at 5927.

18. Emergency Temporary Standard for Occupational Exposure to Benzene; Notice of Hearing, 42 Fed. Reg. 22,516, 22,516–17 (May 3, 1977).

19. *Indus. Union Dep't, AFL-CIO*, 448 U.S. at 623.

20. *Id.* at 622–23, 627–28.

21. Occupational Exposure to Benzene, 43 Fed. Reg. at 5918.

22. *Id.* at 5932 (emphasis added).

23. *Id.* at 5947.

24. *Indus. Union Dep't, AFL-CIO*, 448 U.S. at 634.

25. *See* Occupational Exposure to Benzene, 43 Fed. Reg. at 5940.

26. *See Indus. Union Dep't, AFL-CIO*, 448 U.S. at 613–14.

In 1980, the Supreme Court affirmed the Fifth Circuit's ruling by a five-to-four vote, but with only three other Justices signing onto Justice Stevens's plurality opinion. The plurality reasoned that "the burden was on the Agency to show, on the basis of substantial evidence, that it is at least more likely than not that long-term exposure to 10 ppm of benzene presents a significant risk of material health impairment."[27] Justice Rehnquist concurred in the judgment on the grounds that, in his view, the OSH Act violated the non-delegation doctrine.[28] Justice Marshall dissented, in an opinion joined by three other Justices, arguing that OSHA's actions were a lawful exercise of its authority under the OSH Act.[29]

Legal Issues in the Benzene Case. The Benzene Case is frequently discussed in courses on administrative law, statutory interpretation, and environmental law. It provides an opportunity for discussion of several important legal issues, including the proper standard of judicial review of agency action taken in the face of scientific uncertainty, the role of quantitative risk assessment and cost–benefit analysis in rulemaking, and the role of the non-delegation doctrine, either as a means of invalidating legislation or as a canon of statutory construction.[30]

References to Private Standards in the Plurality Opinion. The Court's plurality opinion contains two references to private standards, both of which are included in the excerpts from the opinion contained in leading casebooks. First, Justice Stevens mentions that OSHA's initial limit of 10 ppm was based on a "national consensus standard" from the American National Standards Institute (ANSI):

> In 1969 the American National Standards Institute (ANSI) adopted a national consensus standard of 10 ppm averaged over an 8-hour period with a ceiling concentration of 25 ppm for 10-minute periods or a maximum peak concentration of 50 ppm. [43 Fed. Reg. 5918, 5919 (1978)]. In 1971, after the Occupational Safety and Health Act was passed, the Secretary adopted this consensus standard as the federal standard, pursuant to 29 U.S.C. § 655 (a).[31]

Second, in an accompanying footnote, Justice Stevens notes that OSHA had considered adopting a more permissive limit of 25 ppm based on documentation issued by the American Conference of Governmental Industrial Hygienists (ACGIH): "the Secretary complied with the directive to choose the most protective standard by selecting the ANSI standard of 10 ppm, rather

27. *Id.* at 653.

28. *See id*. at 671–80 (Rehnquist, J., concurring).

29. *See id.* at 688–724 (Marshall, J., dissenting).

30. *See, e.g.*, MASHAW, MERRILL & SHANE, *supra* note 5, at 883–88; Cass R. Sunstein, *Nondelegation Canons*, 67 U. CHI. L. REV. 315, 316 (2000).

31. *Indus. Union Dep't, AFL-CIO*, 448 U.S. at 617.

than the 25 ppm standard adopted by the American Conference of Government [sic] Industrial Hygienists. 43 Fed. Reg. 5919 (1978)."[32]

Justice Stevens's opinion does not provide any background information about ANSI, ACGIH, or "national consensus standards." Although both ANSI and ACGIH are nongovernmental entities involved in the establishment of private standards, we have found that many students reading these passages in their casebooks understandably assume that ANSI and ACGIH are government agencies. After all, both ACGIH and ANSI are involved in the development of standards that are used in regulations, and ACGIH even has the word "governmental" in its name.

Although Justice Stevens's opinion refers to a 25 ppm ACGIH "standard," ACGIH at that time (and today) actually referred to the 25 ppm level as a "threshold limit value" (TLV).[33] That 25 ppm TLV was developed in 1966 by a committee called the "Committee on Threshold Limit Values."[34] ACGIH documentation from 1971 instructed industrial hygienists to ensure that "this limit should be considered a ceiling and exposure to higher concentrations not permitted."[35] Through a formal policy statement that ACGIH adopted in 1988, the organization explicitly indicates that its TLVs should be treated as mere "guidelines" to help inform the professional judgment of industrial hygienists, not as "standards" per se. In particular, the organization notes that "[t]hese values are *not* fine lines between safe and dangerous concentrations . . . ."[36]

In addition to missing some of the nuance in ACGIH's limit values, Justice Stevens's opinion is somewhat misleading in its characterization of ANSI having "adopted a national consensus standard of 10 ppm." First, the opinion misstates the role that ANSI plays in the world of private standards. ANSI does not develop or adopt standards itself, but instead provides procedural guidelines for how other organizations develop them. In the case of benzene, the 10 ppm standard adopted in 1969 was actually developed by a

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32. *Id.* at 617 n.7. Justice Stevens inaccurately refers to the American Conference of Governmental Industrial Hygienists (ACGIH) as the "American Conference of *Government* Industrial Hygienists" (emphasis added), instead of the American Conference of *Governmental* Industrial Hygienists.

33. AM. CONF. OF GOVERNMENTAL INDUS. HYGIENISTS, DOCUMENTATION OF THRESHOLD LIMIT VALUES (1966).

34. *Id.* at 3.

35. AM. CONF. OF GOVERNMENTAL INDUS. HYGIENISTS, DOCUMENTATION OF THRESHOLD LIMIT VALUES FOR SUBSTANCES IN WORKROOM AIR (1971).

36. *TLV Chemical Substances Introduction*, AM. CONF. OF GOVERNMENTAL INDUS. HYGIENISTS, http://www.acgih.org/tlv-bei-guidelines/tlv-chemical-substances-introduction (last visited Jan. 28, 2018).

different private standards organization called the American Industrial Hygiene Association (AIHA).[37] After the standard had been developed under AIHA's auspices, ANSI later simply included the standard in a catalog of standards adopted by organizations like AIHA which, at the time, ANSI had recognized as an accredited standards developer.[38] AIHA is never mentioned in Justice Stevens's opinion.

Second, although Justice Stevens credits ANSI with having adopted the 10 ppm standard in 1969, ANSI did not in fact exist at the time the 10 ppm standard was adopted.[39] A predecessor organization—the United States of America Standards Institute (USASI)—oversaw and recognized AIHA and other standards developers at that time.[40] It was only once USASI was reconstituted as ANSI in October 1969, a month after the 10 ppm benzene standard was adopted, that the standard became part of a collection of ANSI's "American National Standards."[41] Of note, AIHA is no longer an ANSI-accredited standards developer, and the 10 ppm benzene standard has since lapsed.

Finally, in stating that "ANSI adopted a *national consensus standard*," Justice Stevens's opinion appears to suggest that the term "national consensus standard" derives from ANSI. However, the term actually derives from the OSH Act, which defines a "national consensus standard" as one that has been developed "by a nationally recognized standards-producing organization" through an open process—and has been "designated as such" by the Secretary of Labor.[42] Thus, no standards development organization can itself

37. *Id. See generally* AM. INDUS. HYGIENE ASS'N, https://www.aiha.org/Pages/default.aspx (last visited Mar. 22, 2019) (providing general information about AIHA).

38. AIHA is no longer a standards development organization and thus it is also no longer ANSI-accredited.

39. *See ANSI Centennial Timeline,* AM. NAT'L STANDARDS INST., https://share.ansi.org/Shared%20Documents/News%20and%20Publications/Brochures/ANSI-centennial-timeline.pdf (last visited Mar. 22, 2019) (describing how in 1969 "USASI reorganize[d] as the American National Standards Institute"). Of note, the federal government also made these same two mistakes in its brief. Brief for the Federal Parties at 10 n.9, Indus. Union Dep't, AFL-CIO v. Am. Petrol. Inst., 448 U.S. 607 (1980) (Nos. 78-911, 78-1036) ("And in 1969 the American National Standards Institute, a voluntary standards-setting organization, adopted a TLV of 10 ppm.").

40. *See ANSI Centennial Timeline, supra* note 39 (noting that in 1966 USASI was formed "in response to identified needs for a broader use of the consensus principle in developing and approving standards").

41. *See* BENZENE STANDARD, *supra* note 6. As noted, ANSI did not exist when the standard was adopted, and USASI no longer exists. *Id.* The standard is long out of date, formally withdrawn, and both AIHA and ANSI disavow any claim to it. *Id.*

42. *See* 29 U.S.C. § 652(9) (1994).

"adopt" a national consensus standard; it can only create a standard that the Secretary could potentially designate as a national consensus standard.[43]

These subtleties in Justice Stevens's account could be helpful for an instructor to use as a "teachable moment" to encourage students to think critically about Supreme Court opinions, especially in their presentation of background material. For our purposes here, though, we simply have noted the above errors and omissions to clarify why, in the sections that follow, we refer to what Justice Stevens described as an ANSI standard instead as the "AIHA standard" or sometimes, simply as a reminder, the "AIHA ('ANSI')" standard.[44] In the classroom, however, an instructor may well choose for convenience sake to refer simply to the private 10 ppm standard as the "ANSI standard" in order to remain consistent with the Court's opinion.

A further note on terminology is in order—both for purposes of this Teaching Guide as well as potentially for teaching these issues to students. When OSHA issues a rule setting a binding limit on workplace exposure to airborne benzene emissions, that regulation is also called a "standard." For example, Justice Stevens's opinion begins by noting that "[t]his litigation concerns a *standard* promulgated by the Secretary of Labor to regulate occupational exposure to benzene."[45] Justice Stevens's usage tracks the OSH Act itself, which contains an entire section entitled "Standards," which authorizes the Secretary of Labor to issue binding health and safety rules: "The Secretary may by rule promulgate . . . any occupational safety or health standard."[46]

The Act further defines the term "occupational safety and health standard" as "a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment."[47] Thus, this case involves two kinds of standards: *public* standards, issued as rules by OSHA, and *private* standards, developed by organizations like AIHA. To avoid confusion, we refer to the OSHA standard as a "limit" or "regulation" in the discussion below, reserving the word "standard" for private standards.

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43. *See id.*

44. We use "AIHA ('ANSI')" merely for convenience and clarity, placing "ANSI" in quotation marks in order to indicate that we are merely following the characterization of the standard in Justice Stevens's opinion. For the reasons discussed in the text above and in notes 6 and 27 *supra*, the 10 ppm standard was never truly an ANSI standard.

45. Indus. Union Dep't, AFL-CIO v. Am. Petrol. Inst., 448 U.S. 607, 611 (1980) (emphasis added).

46. 29 U.S.C. § 655(b) (1994).

47. *Id.* § 652(8).

The AIHA ("ANSI") Benzene Standard (Z3.7.4-1969). The 10 ppm benzene standard developed by AIHA in accord with a process consistent with ANSI's predecessor, USASI—and thus labeled a "USA Standard"—does more than just state a 10 ppm limit for air concentrations. It describes benzene's physical, chemical, and toxic properties, enumerates acceptable concentrations of benzene under different conditions, and describes the sampling procedure and analytical methods that should be used to monitor and analyze benzene exposure.

On its face, the document containing the standard also contains a range of useful information for anyone seeking to learn about private standards. We highlight here what the standard itself says about its legal status, the process by which it came to be adopted, and its purpose and intended use. First, the standard specifies that it is solely advisory and not legally binding:

> A USA Standard is intended as a guide to the manufacturer, the consumer, and the general public. The existence of a USA Standard does not in any respect preclude anyone, whether he has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard.[48]

Second, the foreword to the standard explains that it was developed as part of a larger process focused on a variety of different air contaminants:

> This USA Standard Acceptable Concentrations of Benzene, Z3.7.4-1969, has been developed by a committee, national in scope, functioning under the procedures of the United States of America Standards Institute. This committee was organized to coordinate all available information on the various air contaminants and to establish acceptable concentrations which could be used in the development of means for controlling such contamination. For many years the need for standard acceptable concentrations of toxic dusts, gases, mists, vapors, and fumes in the air of work places has been recognized. . . . [T]he concentrations set forth in this standard reflect information obtained from all authoritative published data and the experience of the members of the committee.[49]

Finally, the benzene standard states that its purpose was "to provide useful information for the control of benzene exposures and to aid in the design and operation of equipment, so as to protect the health of workers."[50]

B. Standards Organizations Involved in the Benzene Case

This Section provides some background information on each of the four standards organizations implicated in the benzene saga, as context for the instructor or for possible use in class. As indicated in the previous Section,

48. BENZENE STANDARD, *supra* note 6, at 2.

49. *Id.* at 3.

50. *Id.* at 6.

although the plurality opinion in the Benzene Case refers only to ANSI and to ACGIH, two other standards organizations—AIHA and USASI—were actually more directly involved in developing the standard that OSHA initially adopted in 1971.

The American Industrial Hygiene Association (AIHA). AIHA served as the "sponsor" of the 10 ppm benzene standard, playing the leading role in initiating and supporting the development of the standard adopted in 1969.[51] AIHA is a private nonprofit organization founded in 1939 and mostly composed of certified industrial hygienists; it no longer produces any standards (let alone one for benzene), but instead it sponsors research and develops educational materials aimed at safeguarding worker health.[52] Since the Benzene Case, AIHA dissolved the committee that originally developed the 10 ppm benzene standard and now disclaims responsibility for it.

AIHA currently focuses on an array of issues related to workplace safety, including aerosol technology, laboratory safety, nanotechnology, and noise hazards.[53] AIHA and ACGIH also jointly produce a peer-reviewed journal, the *Journal of Occupational and Environmental Hygiene*, which disseminates research "in the areas of occupational, industrial, and environmental hygiene; exposure assessment; engineering controls; occupational and environmental epidemiology, medicine, and toxicology; ergonomics; and other related disciplines."[54]

United States of America Standards Institute (USASI). The USASI, a predecessor to ANSI, was formed in 1966 "in response to identified needs for a broader use of the consensus principle in developing and approving standards; making the voluntary standards system more responsive to consumer needs; and strengthening U.S. leadership internationally."[55] USASI

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51. *See id.* at 1. *See generally* Robert W. Hamilton, *Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health*, 56 TEX. L. REV. 1329, 1343 (1978) ("Approximately twenty-five percent of all American National Standards are generated by the American National Standards Committees. ANSI usually designates an organizational member to sponsor and act as 'secretariat' for each committee; these sponsors oversee the activities, handle the paperwork, and generally ensure the smooth functioning of the committee. Although ANSI has a close relationship with these committees, they are not technically a part of ANSI and, as a consequence, ANSI publicly states that it does not itself write standards but serves only as verifier and coordinator.").

52. *Who We Are*, AM. INDUS. HYGIENE ASS'N (AIHA), https://www.aiha.org/about-aiha/Press/Documents/2013%20AIHA%20FACT%20SHEET.pdf (last visited Mar. 22, 2019).

53. *Id.*

54. *Journal of Occupational and Environmental Hygiene*, AM. CONF. OF GOVERNMENTAL INDUS. HYGIENISTS, http://www.acgih.org/publications/journal/journal-of-occupational-and-environmental-hygiene (last visited Jan. 28, 2019).

55. *ANSI Centennial Timeline*, *supra* note 39. Prior to being named USASI, the entity was called the American Standards Association, and, before that, it was known as American

approved the 10 ppm benzene standard and oversaw the committee which developed the standard.[56] This committee included representatives from twenty different organizations, including those from government (e.g., the U.S. Department of the Labor, Bureau of Labor Standards), industry (e.g., the American Petroleum Institute), and the professions (e.g., the American Public Health Association, the American Industrial Hygiene Association, the American Conference of Governmental Industrial Hygienists).[57]

The American National Standards Institute (ANSI). ANSI is a private nonprofit organization that provides procedural oversight of the development of standards.[58] ANSI's mission is to "enhance the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity."[59] Of note, ANSI itself does not develop standards; rather, it "oversees the development and use of thousands of standards and guidelines by accrediting the procedures of standards developers and approving their documents as American National Standards."[60] ANSI's membership includes corporations, government agencies, standards developers, and academic bodies, as well as others.[61]

ANSI states that its origins date back to World War I, when the federal government created a hybrid public-private committee to develop unified standards related to the war effort.[62] In 1918, several professional associations (mostly engineering organizations) came together with the Departments of War, Navy, and Commerce to form a predecessor to ANSI, the American Engineering Standards Committee (AESC).[63] In 1928, AESC was reorganized and renamed the American Standards Association, which was then reconstituted in 1966 as the USASI.[64] ANSI adopted its current name as a

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Engineering Standards Committee. *See infra* notes 61–66 and accompanying text.

56. *See* BENZENE STANDARD, *supra* note 6, at 3, 7.

57. *Id.* at 3.

58. *About ANSI,* AM. NAT'L STANDARDS INST., https://www.ansi.org/about_ansi/ overview/overview?menuid=1 (last visited Mar. 22, 2019). *See also* Hamilton, *supra* note 51, at 1342 ("ANSI functions as a centralized clearinghouse and coordinator . . . .").

59. *What Is ANSI? An Overview*, AM. NAT'L STANDARDS INST., https://share.ansi.org/Shared%20Documents/News%20and%20Publications/Brochures/WhatIsANSI_brochure.pdf (last visited Mar. 22, 2019).

60. *Id.* Standards sponsored by ANSI-accredited standards developers do not automatically become "American National Standards." The developer must seek approval from ANSI for individual documents.

61. *Id.*

62. Bremer, *supra* note 2, at 305.

63. *ANSI Centennial Timeline*, *supra* note 39.

64. *Id.*

new organization in 1969, when USASI formally folded.[65] Thus, ANSI did not exist in its present form in September 1969 when the 10 ppm benzene standard was developed, although it subsequently included the standard in its own collection of standards shortly after the organization came into existence under the ANSI name in October 1969.[66]

The American Conference of Governmental Industrial Hygienists (ACGIH). ACGIH is a private nonprofit organization founded in 1938 whose goal is "to encourage the interchange of experience among industrial hygiene workers and to collect and make accessible such information and data as might be of aid to them in the proper fulfillment of their duties."[67] Although ACGIH initially had a higher benzene limit than the one OSHA adopted in 1971, ACGIH followed suit and lowered its own benzene threshold limit value to 10 ppm in 1974.[68] It has subsequently lowered its TLV still further.[69]

Today, in addition to maintaining a broad series of TLVs, ACGIH produces 400 publications on various issues, including industrial hygiene, environmental health, indoor air quality, and ergonomics.[70] It also supports educational activities on an array of topics pertinent to worker safety, such as asbestos identification and measurement, bloodborne pathogens, and mold remediation.[71]

C. The Standards Development Process

This Section focuses on the standards development process used by ANSI-accredited standards developers today. This process bears many similarities to the process that was used in 1969 to develop the 10 ppm benzene standard. As stated previously, the 10 ppm standard was not truly an ANSI standard and was instead developed by AIHA under a procedural framework overseen by the USASI. Nevertheless, since ANSI is the only accreditor of standards developers in the United States, its procedures are the most relevant today for professional students learning about the standards-development process, and they provide an excellent illustrative model for how the original 10 ppm standard would have come into existence.[72]

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65. *Id.*

66. BENZENE STANDARD, *supra* note 6.

67. *About Us: History*, AM. CONF. OF GOVERNMENTAL INDUS. HYGIENISTS, http://www.acgih.org/about-us/history (last visited Mar. 22, 2019).

68. Occupational Exposure to Benzene, 43 Fed. Reg. 5918, 5919 (Feb. 10, 1978).

69. *See, e.g.*, Peter F. Infante, *Benzene and Leukemia: The 0.1 ppm ACGIH Proposed Threshold Limit Value for Benzene*, 7 APPLIED OCCUPATIONAL ENVTL. HYGIENE 253 (1992).

70. AM. CONF. OF GOVERNMENTAL INDUS. HYGIENISTS, *supra* note 67.

71. *Id.*

72. *See* Hamilton, *supra* note 51, at 1978 (describing ANSI "as a centralized clearinghouse and coordinator for the voluntary standards program").

To develop an approved "American National Standard," a standard-developing organization must first be accredited by ANSI as a "Developer of American National Standards."[73] Examples of such accredited organizations today include: the API; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; American Society of Mechanical Engineers; ASTM International; the Institute of Electrical and Electronics Engineers; National Electrical Manufacturers Association; and the National Fire Protection Association.[74] ANSI accredits these and more than 230 other organizations that set standards, but it does not actually develop any standards itself. Although any entity can issue what it purports to be an industry standard, ANSI-accreditation is viewed as an indicator of the fairness of the standards-development process and is thus taken as a sign of the legitimacy of the underlying standard.

To be accredited by ANSI today, a standard developer must submit an application to ANSI's accrediting body, the Executive Standards Council (ExSC), demonstrating its compliance with ANSI's accreditation requirements.[75] If the ExSC decides to grant accreditation, it may later suspend or withdraw the accreditation if it determines that the developer has not maintained its compliance with ANSI requirements.[76]

Standards developed by accredited developers are not automatically designated as "American National Standards." To achieve this designation, standards must specifically be developed by an accredited organization in accordance with procedures that conform with ANSI's "Essential Requirements."[77] These requirements are in turn designed to ensure that standards development adheres to "due process," which ANSI defines as follows:

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73. AM. NAT'L STANDARDS INST., ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS 13–14 (Jan. 2018) [hereinafter ANSI ESSENTIAL REQUIREMENTS], https://share.ansi.org/Shared%20Documents/Standards%20Activities/American%20National%20Standards/Procedures%2C%20Guides%2C%20and%20Forms/ANSI-Essential-Requirements-2018.pdf ("Accreditation is a pre-condition for submitting a standard for consideration for approval as an American National Standard.").

74. AM. NAT'L STANDARDS INST., ANSI ACCREDITED STANDARDS DEVELOPERS LIST (2019), www.ansi.org/asd (last visited Mar. 22, 2019).

75. *See* ANSI ESSENTIAL REQUIREMENTS, *supra* note 73, at 13–14; *see also* Hamilton, *supra* note 51, at 1342 ("Some organization members, however, decide whether or not to submit each standard that they develop to ANSI on a standard-by-standard basis. Many ANSI members that develop standards that might qualify under ANSI procedures do not submit all of them for approval; they may feel that the standard does not have a broad enough interest or that questions may be raised about the existence of a consensus or the need for recognition as an American National Standard.").

76. ANSI ESSENTIAL REQUIREMENTS, *supra* note 73, at 14–15.

77. *Id.*

> Due process means that any person (organization, company, government agency, individual, etc.) with a direct and material interest has a right to participate by: a) expressing a position and its basis, b) having that position considered, and c) having the right to appeal. Due process allows for equity and fair play.[78]

ANSI further states that a standards-development process that will satisfy its due process principle will meet at least ten "minimum acceptable. . . requirements" in the following areas:[79]

1. Openness
2. Lack of dominance
3. Balance
4. Coordination and harmonization
5. Notification of standards development
6. Consideration of views and objections
7. Consensus vote
8. Appeals
9. Written procedures
10. Compliance with normative American National Standards policies and administrative procedures.[80]

For each of these ten requirements, ANSI offers additional details. To meet the requirement for a lack of dominance, for example, a committee or other body developing a standard "shall not be dominated by any single interest category, individual or organization."[81] ANSI further defines dominance as "a position or exercise of dominant authority, leadership, or influence by reason of superior leverage, strength, or representation to the exclusion of fair and equitable consideration of other viewpoints."[82] Similarly, to meet ANSI's balance requirement, a "standards development process should have a balance of interests" and a standards developer should actively engage in outreach if needed to ensure such balance is attained.[83]

To begin developing an American National Standard, ANSI-accredited developers must thus identify a balanced set of interested individuals, representatives of affected organizations, and relevant experts, and then invite them to form a "consensus body" organized for the purpose of developing the standard.[84] After such a body deliberates, it publishes a proposed

78. *Id.* at 4.

79. *Id*. at 4–5.

80. *Id.*

81. *Id.* at 4.

82. *Id.*

83. *Id.*

84. AM. NAT'L STANDARDS INST., AMERICAN NATIONAL STANDARD (ANS) DEVELOPMENT: KEY STEPS, https://share.ansi.org/Shared%20Documents/Standards%20

standard in an ANSI publication for public review and comment before it can be finalized.[85] From there, the draft then enters a review period, during which negative votes and comments are considered and responded to by the body. Ultimately, the draft must be voted on by the consensus body. If a "consensus" is reached, then documentation showing that due process requirements have been met is submitted by the sponsoring standards developer in support of a request for the approval of the standard as an American National Standard (ANS).[86] The ANSI Board of Standards Review is the committee at ANSI that approves standards as ANS for most ANSI-accredited standards developers.[87] If a standard is approved, it becomes an "American National Standard."[88]

Standards developers must also have an appeals process in place "for the impartial handling of procedural appeals regarding any action or inaction."[89] Under the "Essential Requirements," affected parties must be given the right to appeal to ANSI, once they have exhausted their appeals through the developer.[90]

These requirements are similar to those ANSI put in place soon after it came into existence in 1969. At that time, ANSI had in place two alternative methods for developing standards:

> The first procedure, the canvass method, involves the submission of a proposed standard by an interested group to a vote of knowledgeable individuals and organizations. The voter list must be approved for comprehensiveness by ANSI, and the completed standard and voting results are also reviewed by that organization. The other principal method used to develop standards is the committee method, whereby representatives of affected groups are chosen to form a committee, with an interested organization as secretariat. This committee develops the standard, which again must be reviewed by ANSI.[91]

The 10 ppm benzene standard was developed using a committee method—not

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Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/ANS_Steps_080818.pdf#search=KEY%20STEPS (last visited Mar. 22, 2019).

85. *Id.*

86. *Id.*

87. ANSI ESSENTIAL REQUIREMENTS, *supra* note 73, at 7–9. For an ANSI-accredited standards developer with the status of ANSI "audited designator"—which currently is just a small number of accredited standard developers—the Board of Standards Review does not generally get involved in the approval of ANS. *Id.* at 2224.

88. *Id.* at 7. A select group of ANSI-accredited standards development organizations who have demonstrated a "consistent record of successful voluntary standards development" may apply for and be granted "ANSI Audited Designator Status," which enables them to designate their own standards as ANSs without the separate approval of the ANSI Board of Standards Review. *Id.* at 22.

89. *Id.* at 4–5.

90. *Id.* at 10.

91. Robert D. Moran, *Occupational Safety and Health Standards as Federal Law: The Hazards of*

under ANSI, of course, but under similar procedures under AIHA's auspices. The committee that developed the 10 ppm benzene standard—the "Sectional Committee on Acceptable Concentrations of Toxic Dusts and Gases"—included in its membership representatives from the following organizations:

American Conference of Governmental Industrial Hygienists
American Industrial Hygiene Association
American Institute of Chemical Engineers
American Insurance Association
American Mutual Insurance Alliance
American Petroleum Institute
American Society of Safety Engineers
American Society for Testing and Materials
Bureau of Labor Standards, U.S. Department of Labor
Bureau of Mines, U.S. Department of Interior
Conference of State and Provincial Health Authorities of North America
Industrial Medical Association
International Association of Governmental Labor Officials
Manufacturing Chemists Association
National Safety Council
Society of Toxicology

The committee also included liaison representatives from the Canadian Standards Association, the U.S. Department of the Army, and the Public Health Service in the U.S. Department of Health, Education, and Welfare. In addition, the committee included eleven individual members, such as university professors.

Committee procedures are designed to ensure that standards emerge from the consensus of the interested parties who made up the committee. For ANSI, what constitutes consensus has never been precisely defined. In its early years, for example, ANSI indicated that consensus meant merely "substantial agreement":

> [A] consensus must be reached of those having substantial concern with [a standard's] scope and provisions. In standardization practice a consensus is achieved when substantial agreement is reached by concerned interests according to the judgment of a duly appointed authority. Consensus implies much more than the concept of a simple majority but not necessarily unanimity.[92]

Today, ANSI still accepts that consensus bodies can reach decisions on

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Haste, 15 WM. & MARY L. REV. 777, 785–86 (1974) (citing Donald Peyton, *ANSI: Consensus Agency for Voluntary Standards*, DEF. MGMT. J. 42–43 (1973)).

92. *Id.* at 785–86 (citing AM. NAT'L STANDARDS INST., GUIDE FOR THE DEVELOPMENT OF AMERICAN NATIONAL STANDARDS 6 (1972)). *See also* National Consensus Standards and

standards with less than unanimous agreement by its members. ANSI's procedures, however, call for more than just a majority or supermajority vote that might constitute a "numerical" consensus. Instead, they contemplate that an effort will be made to resolve objections that have been aired. If an objection is not resolved, the body is supposed to send a written response and notify the objecting party of the right to file a procedural appeal to the developer.[93]

Students could be encouraged to compare ANSI's private due process principles with required public administrative procedures. For example, students may notice that ANSI's requirements for balance and lack of dominance parallel the Federal Advisory Committee Act's requirement that agencies ensure that advisory committee memberships are "fairly balanced in terms of the points of view represented and the functions to be performed by the advisory committee."[94] Similarly, the notice-and-comment rulemaking requirements in § 553 of the Administrative Procedure Act (APA)[95] bear an affinity with ANSI's requirements for "notification" and "consideration of views and objections."[96] Furthermore, just as the Supreme Court held in *Motor Vehicle Manufacturers Ass'n v. State Farm Automobile Insurance Co.*[97] that agencies must go through the same notice-and-comment process when revising or rescinding existing rules as when issuing them in the first place,[98] ANSI's Essential Requirements apply equally to the "approval, revision, reaffirmation, and withdrawal of American National Standards (ANS)."[99]

ANSI's process departs from public law when it comes to its definition of consensus. Under the Negotiated Rulemaking Act, consensus is defined in terms of a "unanimous concurrence among the interests represented."[100] As

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Established Federal Standards, 36 Fed. Reg. 10,466, 10,466 (May 29, 1971) (noting that the private standards OSHA adopted for its initial workplace standards had been developed by nongovernmental entities using "procedures whereby it can be determined that persons interested and affected by the scope or provisions of the standards have reached substantial agreement on their adoption").

93. ANSI ESSENTIAL REQUIREMENTS, *supra* note 73, at 8–10.

94. 5 U.S.C. app. § 5(b)(2) (2006). *See generally* Daniel E. Walters, *The Justiciability of Fair Balance Under the Federal Advisory Committee Act: Toward a Deliberative Process Approach*, 110 MICH. L. REV. 677 (2012) (describing the Act's "fair balance" requirement).

95. Administrative Procedure Act, 5 U.S.C. § 553 (2012).

96. For an elaboration of ANSI's notification and comment requirements, see sections 2.5.2 and 2.6 of ANSI ESSENTIAL REQUIREMENTS, *supra* note 73.

97. 463 U.S. 29 (1983).

98. *See id.* at 42 ("Accordingly, an agency changing its course by rescinding a rule is obligated to supply a reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance.").

99. ANSI ESSENTIAL REQUIREMENTS, *supra* note 73, at 4.

100. 5 U.S.C. § 562(2) (2012). ANSI's definition of consensus is similar, however, to the

noted above, however, ANSI does not require unanimity. In its 2018 documentation on its Essential Requirements, ANSI does not impose any specific definition of consensus, but it does offer an example that makes clear that consensus can mean much less than unanimity: "An example of the criteria for consensus includes a requirement that a majority of the consensus body cast a vote (counting abstentions) and at least two-thirds of those voting approve (not counting abstentions)."[101] As a further indication of how flexibly consensus can be conceived, ANSI indicates that "[t]he developer may submit for approval an alternative methodology for determining consensus."[102]

D. Incorporation of Private Standards

Another way for students to make a connection between private standards and public law is through a discussion of public regulatory agencies' incorporation, or adoption, of private standards as part of binding law. That is what OSHA did in 1971: it adopted the 10 ppm standard originally developed by AIHA as the federal limit on airborne concentrations of benzene in the workplace.[103] Although OSHA listed the eight-hour time-weighted average of 10 ppm as the maximum permissible exposure in workplaces, it also explicitly indicated that it was incorporating ANSI standards and it made specific reference to Z37.4-1969, ANSI's catalog number for the benzene standard.[104]

As such, OSHA engaged in what is known as "incorporation by reference"—that is, adopting a private standard by referring only to the name or number of the private standard. Incorporation by reference has recently garnered considerable interest among practitioners and administrative law scholars. The Benzene Case affords an opportunity to introduce students to incorporation by reference; a separate course module available at www.codes-and-standards.org, provides more in-depth teaching guidance and materials specifically focused on incorporation by reference.

OSHA's Incorporation of the Benzene Standard. By themselves, private standards have no legal force, but once a federal agency incorporates them, they

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definition in OMB Circular A-119, which defines consensus as "general agreement but not necessarily unanimity." OFFICE OF MGMT. & BUDGET, CIRCULAR NO. A-119 REVISED: FEDERAL PARTICIPATION IN THE DEVELOPMENT AND USE OF VOLUNTARY CONSENSUS STANDARDS AND IN CONFORMITY ASSESSMENT ACTIVITIES para. 1, 16 (2016), https://www.nist.gov/sites/default/files/revised_circular_a-119_as_of_01-22-2016.pdf.

101. ANSI ESSENTIAL REQUIREMENTS, *supra* note 73, at 9.

102. *Id.*

103. National Consensus Standards and Established Federal Standards, 36 Fed. Reg. 10,466, 10,505 tbl.G-2 (May 29, 1971).

104. *Id.* This catalog number is used to identify the standard in all settings, similar to citation methods for legal materials.

become part of binding law. OSHA adopted the 10 ppm benzene standard as law in 1971 using its authority under the 1970 OSH Act, which called on OSHA "as soon as practicable"—but in no event later than two years—to "promulgate as an occupational safety or health standard any national consensus standard, and any established Federal standard, unless he determines that the promulgation of such a standard would not result in improved safety or health for specifically designated employees."[105]

In this way, the Act specifically directed OSHA to adopt private standards as public regulations. It expressly defined a "national consensus standard" as a standard adopted by a private standards-development organization:

> [A]ny occupational safety and health standard or modification thereof which (1), has been adopted and promulgated by a nationally recognized standards-producing organization under procedures whereby it can be determined by the Secretary that persons interested and affected by the scope or provisions of the standard have reached substantial agreement on its adoption, (2) was formulated in a manner which afforded an opportunity for diverse views to be considered and (3) has been designated as such a standard by the Secretary, after consultation with other appropriate Federal agencies.[106]

Importantly, although the statute did not specifically require that the standards development organization be ANSI-accredited, Congress clearly had ANSI in mind when it included the requirement that any incorporated standard come from a "nationally recognized" standards development organization.[107] In fact, OSHA and ANSI later signed a Memorandum of Understanding (MOU) that recognized "ANSI as a 'coordinating and approval agency for voluntary national standards' with the ability to render technical assistance and support to OSHA."[108] (Some labor unions raised questions about the propriety of this agreement, and the Assistant Secretary of Labor was forced to clarify that the MOU was only "a rather loose statement, not any kind of binding agreement.")[109]

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105. 29 U.S.C. § 655(a) (1994).

106. *Id.* at § 652(9).

107. *See* 116 CONG. REC. 37,623 (1970) (remarks of Sen. Javits) ("A national consensus standard, under this act, is a standard which has been developed by one of two organizations at the present time: The American National Standards Institute or the Fire Underwriters Association."); Vincent C. Baird, Industrial Union Department, AFL-CIO v. American Petroleum Institute*: Limiting OSHA's Authority to Regulate Workplace Carcinogens under the Occupational Safety and Health Act*, 9 B.C. ENVTL. AFF. L. REV. 623, 633 (1981) ("Along with the National Fire Protection Association, ANSI is the major source of national consensus standards.").

108. Hamilton, *supra* note 51, at 1398 (citing *Memorandum of Understanding between the Occupational Safety and Health Administration and the American National Standards Institute*, 6 OCCUP. SAFETY & HEALTH REP. (BNA) 846 (1976)).

109. *Id*. at 1399 (citing 7 OCCUP. SAFETY & HEALTH REP. (BNA) 140 (1977)).

In May 1971—a month after OSHA officially came into existence as a division within the U.S. Department of Labor—the agency adopted hundreds of private standards for airborne contaminants.[110] Within a nearly 250-page *Federal Register* document that contained a broad range of workplace standards, OSHA included about two pages of tables of maximum levels for exposure to airborne contaminants. This initial set of air quality standards mostly consisted of ACGIH's 1970 threshold limit values for about 400 different chemicals. But for a little more than twenty chemicals—including benzene—OSHA incorporated ANSI American National Standards. OSHA listed the "8-hour time-weighted average" of 10 ppm for benzene, expressly referencing ANSI's standard number, Z37.4-1969. OSHA's rule stated that "[e]xposures by inhalation . . . at a concentration above those specified in . . . the American National Standards listed in Table G-2 of this section . . . shall be avoided, or protective equipment shall be provided and used."[111]

In adopting the initial 10 ppm benzene standard, OSHA did not follow the normal rulemaking process under the APA,[112] as the OSH Act authorized OSHA to bypass the APA when adopting standards during the two years following the effective date of the OSH Act.[113] Congress provided this exception "so that OSHA would have a mechanism to begin immediately protecting the Nation's workers through mandatory standards."[114] Thus, private standards, including the benzene standard, became law without OSHA needing to publish a final rule or comply with the evidentiary burdens typically associated with notice-and-comment rulemaking.

Indeed, the full details of ANSI Z37.4-1969 were not even reprinted in the *Federal Register*. Instead, OSHA indicated that "[c]opies of the standards which are incorporated by reference may be examined at the national office of the Occupational Safety and Health Administration . . . or at any of its regional offices," and that "[c]opies of such private standards may be obtained from the issuing organizations."[115] Despite these departures from normal administrative procedures, including publication of all the applicable binding terms of the benzene standard, OSHA made clear that "[t]he

110. *See* National Consensus Standards and Established Federal Standards, 36 Fed. Reg. 10,466, 10,466–714 (May 29, 1971) (listing private standards adopted by OSHA).

111. *Id*. at 10,503–04; *see also* 29 C.F.R § 1910.1000 tbl.Z-2 (1979); *see also* Moran, *supra* note 91, at 780.

112. Occupational Exposure to Benzene, 43 Fed. Reg. 5918, 5919 (Feb. 10, 1978) ("The OSHA standard was adopted without rulemaking under the authority of § 6(a) of the Act.").

113. *See* 29 U.S.C. § 655(a) (1994) (requiring the Secretary of Labor to promulgate standards "[w]ithout regard to chapter 5 of title 5, United States Code . . . as soon as practicable").

114. Updating OSHA Standards Based on National Consensus Standards, 69 Fed. Reg. 68,283 (Nov. 24, 2004).

115. 29 C.F.R. § 1910.6(b) (1972).

standards of agencies of the U.S. Government and organizations which are not agencies of the U.S. Government which are legally incorporated by reference in this part, have the same force and effect as other standards in this part."[116]

In 1977, OSHA took an emergency action to lower its benzene limit to 1 ppm, a lower limit than those set by both AIHA and ACGIH. Interestingly, however, when OSHA took steps to lower the standard permanently to 1 ppm in 1978, it explicitly cited in the preamble to the views of ACGIH in support of its decision to lower the benzene limit:

> Industry participants have cited the 10 ppm level established by the ACGIH as evidence that this level can be considered safe. However, in establishing TLV's, ACGIH recognizes that for some workers harmful health effects may result from exposure to the toxic substance at levels below the TLV. Therefore, the 10 ppm TLV for benzene is recognized by ACGIH as a level which does not protect all workers from material impairment of health.[117]

It is notable that, even though OSHA diverged in 1978 from the private standards that applied to benzene, it felt a need to justify its decision to do so. By 1978, OSHA no longer could avail itself of the OSH Act's exemption from the normal notice-and-comment rulemaking procedure. Although in principle the agency still could have borrowed from private standards, at that point it needed to make and be able to justify an independent judgment.

Incorporation of Standards into Federal Law. The practice of incorporating private standards into government regulations is actually quite common.[118] A 2018 search found that the Code of Federal Regulations contained over 17,000 "incorporations by reference."[119] These incorporated standards address a wide array of regulatory issues, including toy safety, nuclear power plant operations, water sampling, and off-label uses of prescription medications.[120] ANSI alone has reportedly overseen roughly 200 standards that have been incorporated in over 550 rules.[121]

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116. *Id.* § 1910.6(a).

117. Occupational Exposure to Benzene, 43 Fed. Reg. at 5925.

118. *See* Bremer, *supra* note 2, at 279 ("[P]rivate standards are essential to nearly every aspect of modern life.").

119. *Nat'l Inst. for Standards & Tech., Regulatory SIBR (P-SIBR) Statistics*, STANDARDS INCORPORATED BY REFERENCE DATABASE, https://www.nist.gov/standardsgov/what-we-do/federal-policy-standards/sibr (last visited Mar. 22, 2019) (showing 23,624 total incorporations by reference).

120. Nina A. Mendelson, *Private Control over Access to the Law: The Perplexing Federal Regulatory Use of Private Standards*, 112 MICH. L. REV. 737, 740 (2014) [hereinafter Mendelson, *Private Control*]; Nina A. Mendelson, *We Need Full Public Access to the Law*, REG. REV. (July 1, 2015), https://www.theregreview.org/2013/07/01/01-mendelson-access-to-law/.

121. Mendelson, *Private Control*, *supra* note 120, at 757.

In addition to specifically authorizing agencies to incorporate standards as it did in the OSH Act, Congress and the White House have generally encouraged or even required government agencies to use private standards wherever feasible.[122] In 1982, the Office of Management and Budget (OMB) issued Circular A-119, directing agencies "to use standards developed or adopted by voluntary consensus standards bodies rather than government-unique standards, except where inconsistent with applicable law or otherwise impractical."[123] When agencies choose not to rely on private standards and instead develop their own, they must "submit a report describing the reason(s) for its use of government-unique standards in lieu of voluntary consensus standards."[124]

In 1996, Congress codified the language from the OMB directive in the National Technology Transfer and Advancement Act of 1995 (NTTAA), providing that, unless inconsistent with other laws or impractical, "all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments."[125] Similarly, when agencies decide to use government standards instead of a voluntary ones, they must "transmit[] to the Office of Management and Budget an explanation of the reasons for using such standards."[126]

Policy Tradeoffs. Incorporating private standards has several potential advantages. First, the government often lacks the knowledge and resources to develop the many highly-technical standards that are specified in regulations, so relying on private standards saves the government money, time, and resources.[127] Circular A-119 lists multiple goals of incorporating private standards, including "eliminating the cost to the Federal government of developing its own standards and decreasing the cost of goods procured and the burden of complying with agency regulation . . . and . . . furthering the reliance upon private sector expertise to supply the Federal government with cost-efficient goods and services."[128] Relying on nongovernmental standards may also help to harmonize government regulations with private standards and avoid having conflicting governmental and nongovernmental standards on the same topics.[129]

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122. *See id*. at 749; Bremer, *supra* note 2, at 295–96.

123. OFFICE OF MGMT. & BUDGET, *supra* note 100, at 14.

124. *Id*. at 17.

125. National Technology Transfer and Advancement Act of 1995 § 12(d), 15 U.S.C. § 272 note (2012).

126. § 12(d)(3).

127. Bremer, *supra* note 2, at 308–09.

128. OFFICE OF MGMT. & BUDGET, *supra* note 100, at 14.

129. Bremer, *supra* note 2, at 328–29.

Federal agencies' adoption of private standards can also present disadvantages, especially if incorporation is not pursued thoughtfully. Richard D. Moran, the first chairman of OSHA, lamented that OSHA's quick, early action, taken at the direction of Congress, to incorporate hundreds of voluntary standards such as the 10 ppm benzene standard had led to several unintended consequences, as many of these standards were designed to be advisory and were too vague to be enforceable.[130] In Moran's view, this hasty process led to a situation in which "[m]any of the standards which now have the force of law not only fail to guide interested employers in their attempts to improve job safety but also lack the specificity necessary for fair and adequate enforcement; indeed, they often are so vague as to suggest conflict with requirements of due process."[131]

Another prominent concern about incorporation by reference is that the public lacks adequate access to the private standards that become part of the law. Because private standards are often copyrighted, they frequently cannot be reproduced in the *Federal Register* and the *Code of Federal Regulations* nor posted on government websites. Thus, federal agencies often incorporate private standards only "by reference," identifying the relevant standard in the regulation without actually making the standard itself publicly available. (By law, the standards must be "reasonably available" even if not published,[132] which has historically been construed to mean that the agency needs to provide one physical copy to the National Archives and retain another copy in the agency's office or library.)[133] As a result, individuals and organizations often need to pay fees—sometimes substantial ones—to access incorporated private standards and read their content. To some scholars and other observers, the notion of forcing individuals to pay a fee in order to access the law is inconsistent with basic norms of democracy and fairness.[134]

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130. Moran, *supra* note 91, at 785–92.

131. *Id.* at 780.

132. Freedom of Information Act, 5 U.S.C. § 552(a)(1) (2012).

133. Peter L. Strauss, *Private Standards Organizations and Public Law*, 22 WM. & MARY BILL RTS. J. 497, 503 (2013).

134. *See, e.g.*, Mendelson, *Private Control*, *supra* note 120, at 738–39; Cary Coglianese, Comment Letter on Proposed Rule on Incorporation by Reference (May 30, 2012), https://www.law.upenn.edu/live/files/8232-coglianeseibrcommentpdf ("The ability of members of the public to read and understand the rules imposed by their government has long been a hallmark of democracy."); *see also* AM. NAT'L STANDARDS INST., KEY STEPS, INCORPORATION BY REFERENCE, REASONABLE AVAILABILITY, AND THE U.S. STANDARDIZATION SYSTEM, https://www.ansi.org/ibr/ (last visited Mar. 22, 2019); OFFICE OF THE FED. REG., IBR HANDBOOK (July 2018), https://www.archives.gov/files/federal-register/write/handbook/ibr.pdf.

The cost of accessing standards can vary dramatically. Although there are no comprehensive data on the cost of accessing private standards incorporated into regulations, Professor Emily Bremer has documented the costs of accessing standards incorporated by the Pipeline and Hazardous Materials Safety Administration (PHMSA), reporting that while the majority of individual standards could be accessed online in read-only format for free, others cost several hundred dollars, and purchasing the complete set of PHMSA's standards would cost an individual nearly $10,000.[135]

IV. DISCUSSION QUESTIONS

This Section provides some discussion questions, which are designed to encourage students to think about the policy and legal issues implicated by private standards—and OSHA's reliance on private standards in the Benzene Case in particular.

Question 1: What advantages and disadvantages do private standards offer over government regulations?

Question 2: What types of procedures do you think standards development organizations should be required to follow when developing standards?

Question 3: How do ANSI's "Essential Requirements" for standards development procedures compare to administrative procedures in public law?

a) How well do these "Essential Requirements" capture the essence of "due process" in the development of private standards?
b) Would you like to see ANSI change or add to its procedural requirements in any way?

Question 4: What are the advantages and disadvantages of federal agencies relying on private standards as a basis for public regulations?

a) Which values or interests are served by incorporation by reference? Which are undermined or negatively affected ?
b) Was Congress justified in authorizing OSHA through the OSH Act to make an initial incorporation of private standards without following normal rulemaking procedures called for by the APA?

Question 5: Do you find it troubling at all that Congress effectively delegated oversight of "national consensus standards" under the OSH Act to

135. *See* Bremer, *supra* note 2, at 313–17. Professor Bremer, now on the faculty of Notre Dame Law School, served as the Research Chief of the Administrative Conference of the United States at the time she conducted the research cited here.

private organizations such as ANSI? To what extent does the government's reliance on private standards implicate the non-delegation doctrine or related concerns?

Question 6: Based on what you know now, do you think the current system of incorporation by reference is in need of reform? What are the potential costs of making incorporated standards more transparent?

Question 7: In many other countries, the government develops and oversees its own standards, rather than relying on private standards developers and oversight organizations such as ANSI.[136] Do you think such a system would improve the quality of standards? Alternatively, how would the standards system in the United States work without private organizations such as ANSI to oversee the standards development process?

V. MODEL LESSON PLANS

In this Section, we offer instructors three possible plans for organizing a lesson around private standards prompted by the Supreme Court's opinion in the Benzene Case. The first lesson plan is intended to guide a ten-minute mini-lesson that simply calls out the references in the Court's opinion to ANSI and ACGIH, and notes the existence of the world of private standards, almost as an aside before the instructor moves ahead to use the Benzene Case as usual to teach concepts of administrative or environmental law or statutory interpretation. The second lesson plan offers guidance for an approximately thirty-minute half-class session that provides a more in-depth discussion of private standards. The third lesson plan provides tips for planning a full class session around the private standards aspects of the Benzene Case; it draws on the first two lesson plans and shows how those plans could provide a launching point for a broader discussion of private standards and the so-called private nondelegation doctrine, or a more extensive coverage of incorporation by reference.

A. Ten-Minute Lesson Plan

Learning objective: To ensure students understand the references to ANSI and ACGIH in the Supreme Court's opinion in the Benzene Case and to make them generally aware of the existence of private standards.

Class time: About ten minutes.

136. *Id.* at 299.

Reading assignment: No additional reading required beyond the selection from the Benzene Case in students' casebooks.

Slides to use: Instructors who normally use slides to teach this case could incorporate slides 3 and 4 from the companion PowerPoint slide set to this Teaching Guide. These two slides excerpt the salient passages from the Supreme Court's opinion that mention ANSI and ACGIH.

Discussion questions: None needed for this short lesson.

Outline for session: This mini-lesson can begin with a question posed by the instructor asking students about the reference in the Supreme Court's opinion to the ANSI and the American Conference on Governmental Industrial Hygienists (ACGIH).[137] That question can then be followed by a very brief lecture by the instructor offering a short background on private standards—almost as an aside—before returning to the instructor's main use of the case in class. Many students will have glossed over these references to ANSI and ACGIH because they are contained in the background section of the Court's opinion. Still, they are worth highlighting, if for no reason other than that the names of these organizations might lead students to think they are governmental organizations.

1. Review the facts. The lesson can begin by the instructor asking students about OSHA actions challenged in the Supreme Court. The instructor should help them see that, in its 1978 rulemaking at issue in this case, OSHA lowered its existing permissible exposure limit from 10 ppm to 1 ppm.

2. Ask about OSHA's initial standard. Before turning to OSHA's 1978 rulemaking and the Court's treatment of it, it is worth pausing to ask where OSHA's original 10 ppm standard came from. Students should be able to identify the relevant passage from the Court's opinion and report that the initial 10 ppm standard was adopted by OSHA in 1971 and was based on a 1969 standard that the Court states was adopted by the American National Standards Institute (ANSI).

3. Ask about ANSI. The instructor could ask students what ANSI is and where its 10 ppm standard came from. It is unlikely the

137. As noted *supra* in note 32, Justice Stevens's opinion contains a typographical error. ACGIH stands for American Conference on Governmen*tal* Industrial Hygienists—not "Government."

students will know, since most casebooks do not explain what ANSI is. They may well even have glossed over this part of the opinion.

4. Teach a brief lesson on private standards. By asking about ANSI, presumably students will now be curious about an aspect of this case that they (and their casebook editors) otherwise overlooked. This will afford an opportunity for the instructor to provide a brief explainer consisting of the following points:

    a. *ANSI is a nonprofit, nongovernmental organization*. So too is ACGIH, which the Court mentions in a footnote in explaining that OSHA considered but rejected a less stringent standard. It is worth students understanding that ANSI and ACGIH are private organizations if for no reason other than that they are emblematic of hundreds of other such organizations that are involved in creating voluntary (i.e., nonbinding) standards that are used by all sorts of businesses and relevant to legal practitioners.

    b. *Private standards like the 10 ppm benzene standard in this case are not legally binding on their own*. But they can become a basis for defining a duty of care in tort law and might be incorporated by reference into binding federal regulations, just as OSHA did in 1971 with respect to benzene.

    c. *Private standards are usually developed through a committee comprising representatives from industry, professional associations, and even sometimes government agencies and general members of the public*. The committees usually decide based on a loose understanding of consensus (i.e., a super-majority rather than unanimity).

    To extend the lesson only slightly further, the instructor may also wish to note one or more of the following points:

    d. When OSHA was first established in 1970, the OSH Act encouraged the agency to adopt private health and safety standards at the outset as an expeditious way of creating an initial set of government regulations.

    e. Federal law today requires that agencies across the government generally look for applicable existing private standards and rely on them wherever feasible before adopting their own regulations. Unlike in OSHA's

opening years, the federal process for incorporation by reference today requires notice-and-comment rulemaking. Provisions of the NTTAA and OMB Circular A-119 further tend to assure that agencies engage in a more deliberate consideration of private standards before incorporating them into public regulations.

5. Return to the 1978 OSHA benzene revision. The instructor can contrast what OSHA did in 1971—basically just look for the most stringent private standard in existence—with what it did in 1978 to revise that standard—look independently at health studies and conduct its own rulemaking. With this background in mind about the underlying standard that OSHA was revising in its 1978 rulemaking, the instructor can then return to the steps that led up to the litigation that resulted in the Benzene Case.

B. Half-Class Lesson Plan

Learning objective: To provide students with an understanding of private standards and how they are developed, and to help students begin to assess the underlying legal or policy considerations raised by government reliance on private standards.

Class time: Approximately thirty to forty minutes.

Reading assignment: In addition to excerpts from the Benzene Case contained in their casebooks or from the Penn Program on Regulation's Voluntary Codes and Standards website (www.codes-and-standards.org), students could be assigned to read an excerpt from the American Industrial Hygiene Association, USA Standard: Acceptable Concentrations of Benzene (ANSI Z37.4-1969) (1969), which is also available on the same website.

Slides to use: The entire PowerPoint slide deck accompanying this Teaching Guide has been developed for use in conducting this half-class session.

Discussion questions: Depending on how the instructor approaches teaching this material, any or all of Discussion Questions 1 through 5 in Part IV of this Teaching Guide could conceivably be used in conjunction with a half-class session. If the instructor wishes to use the PowerPoint slides to lecture, though, it would probably be best to hold off until the end of the lecture before inviting a short discussion organized around Discussion Question 1. The final slide in the slide set is designed as a possible way to summarize discussion around Question 1.

Outline for session: The instructor might wish to introduce the session by asking the same opening questions as in the ten-minute lesson plan above: when the Court in its background discussion refers to the American National Standards Institute (ANSI), what is that organization? This then can lead into a lecture based around the PowerPoint slide set, with the key points to be offered with each slide indicated as below (with the numbers below referring to the corresponding slide numbers):

1. *Purposes of this Lesson*. The bullet points on this slide can certainly be adjusted and adapted depending on the individual instructor's learning objectives. But we have found the three main purposes that can be addressed in thirty to forty minutes are: (1) explaining the historical parts of the Supreme Court's opinion in the Benzene Case; (2) learning about private standards more generally; and (3) developing a basis for student reflection on the role of private standards in a regulatory system. The instructor might emphasize that these purposes are useful for practitioners in a variety of areas today, as private standards exist for almost any consumer product and industrial process. Using the Benzene Case to learn about standards may help students later in their careers in advising clients and helping them navigate a variety of public regulations and private standards.

2. *Government Actions in the Benzene Case*. It is important that students understand that the action under challenge in the Benzene Case is a 1978 revision made by OSHA to its permissible exposure limit for benzene, lowering to 1 ppm a standard that OSHA initially set at 10 ppm in 1971. This slide can be used to indicate how the OSH Act in 1970 contained a provision allowing OSHA to adopt private standards as part of binding public regulations without going through the notice-and-comment procedure that would normally be required under the APA.

3. *Private Standards in the Benzene Case* (Supreme Court's First Reference). This slide excerpts the key passage in the Court's opinion that refers to the ANSI and the 1969 private standard on benzene concentrations in the air. If the instructor has not already called attention to this passage in introducing the lesson, this could be an opportunity to ask if anyone in the class knows what ANSI is—or even whether students think ANSI is another government agency.

4. *Private Standards in the Benzene Case* (Supreme Court's Second Reference). If the assigned casebook or excerpt includes the footnote referring to ACGIH, this slide can be used to point out another private standards organization mentioned in the Court's opinion. If the excerpt does not include that reference, then the instructor who wishes to save time could delete this slide from the slide set and focus the lesson solely on ANSI. An instructor who chooses this latter route should then delete Slide 12 as well as the references to ACGIH in Slides 5 and 10.

5. *Questions Raised by the Court's Historical Account.* The remaining slides will help the students answer the questions posed on Slide 5. Asking them at the outset will make more concrete how the learning objectives of this lesson are to be met. The instructor might stress that, even though just ANSI and ACGIH are mentioned in the Benzene Case, these organizations are just two of hundreds of private standards organizations (although ANSI serves a distinctive role as accreditor rather than standards developer), and that nongovernmental standard-setting organizations have developed private standards for almost any consumer product and industrial process.

6. *The American National Standards Institute.* This slide provides a basis for answering the first question: what is ANSI? The material provided in this Teaching Guide, particularly in Section III.B, will give the instructor the needed material to cover in connection with this slide.

7. *ANSI's Organizational History.* This slide provides students with a summary of details about ANSI's organizational history, which will be important as a basis for the next slide and will make clear to them the difference between USASI and ANSI, a distinction that will be central to understanding the development of the 1969 benzene standard (Slide 10).

8. *The Basic Process of Private Standards Development.* This slide can be used to provide students with a high-level overview of private standards development. Section III.C of this Teaching Guide provides the instructor with the background information to convey to the students. The instructor need not delve into the nitty-gritty of the process followed at any specific standards organization. Rather, students should be given the big picture of committee-driven and consensus-based decisionmaking. But they also should be told that the specific procedural steps used to develop

standards vary from organization to organization. The final bullet point on this slide can be used to emphasize that ANSI is not itself a standards developer; its role is to set broad parameters on what a credible and fair standards development process looks like when initiated by a standards development organization.

9. *ANSI's "Essential Requirements*." Section III.C of this Teaching Guide provides useful background material for presentation with this slide. If students already have some familiarity with the procedures used by government agencies to create regulations, this slide can afford a basis for comparing the principles that ANSI has established for the development of private standards with the kinds of due process and APA requirements that public agencies must follow when developing regulations. Discussion Question 3 could be used if the instructor wished to spend more time focused on a comparison of procedures used in the context of public and private standards.

10. *Steps in Developing the 1969 "ANSI" Benzene Standard*. Sections III.A and III.B provide the information needed by the instructor to explain to students how the 10 ppm came about in 1969 and why it came to be called an ANSI standard by the Supreme Court, even though it was a standard initiated by the AIHA and adopted as a USA Standard by ANSI's predecessor, the USASI. The instructor might use this time to explain how the committee that developed the standard consisted of a few individuals but mostly representatives from industry, professional organizations, and government agencies. This discussion can also help introduce the next slide.

11. *The 1969 "ANSI" Benzene Standard*. This slide could be displayed when the instructor is still covering the process description outlined in the previous slide. Or to the extent that the instructor has assigned the Benzene Standard ahead of time for students to read, this could be an opportunity to ask a student or two to explain what they learned from reading the actual standard. Either here or during the previous slide, the instructor may also wish to note that the API—the organization that filed the lawsuit against OSHA when it tightened its benzene limit to 1 ppm in 1978—was represented on the committee that developed the initial 1969 standard that OSHA adopted in 1971.

12. *The American Conference of Governmental Industrial Hygienists*. This slide can be used to answer the second question posed on Slide 5. Section III.B of this Teaching Guide provides information about the ACGIH to convey to students. The Supreme Court opinion, recall, mentions in a footnote ACGIH's less stringent benzene standard and notes that OSHA chose the stricter ANSI standard over the ACGIH standard in 1971. This choice is notable in part because, in its 1971 rulemaking, OSHA incorporated dozens upon dozens of ACGIH standards for other chemicals but chose the ANSI standard for benzene and a small number of other chemicals.

13. *OSHA's Incorporation of the 1969 Benzene Standard*. This slide answers the third question posed on Slide 5. The instructor can explain that a "national consensus standard" is a term contained in the OSH Act, and that the Act authorized OSHA to incorporate into federal regulation a private standard issued by a "nationally recognized standards-producing organization" if the standard had been "formulated in a manner which afforded an opportunity for diverse views to be considered."[138] This 1970 Act also specifically authorized OSHA to incorporate a national consensus standard without going through the normal notice-and-comment rulemaking process for a period of two years following the law's passage.

14. *OSHA's Incorporation of the 1969 Benzene Standard*. This slide provides students with the section of the *Federal Register* notice in which OSHA incorporated the ANSI standard. By comparing the content of OSHA's *Federal Register* notice with the full content of the private standard, the instructor can vividly drive home to students what it means to incorporate a standard by reference. The *Federal Register* notice only refers to the 1969 "ANSI" standard by its number: 737.4-1969 in Table G-2. Although OSHA indicates the 10 ppm 8-hour time weighted average, that is the only information it provides about the standard. By contrast, the standard itself spans two full pages and contains additional details, such as the "acceptable maximum for peaks" (50 ppm) which cannot be exceeded for more than ten minutes, even if the average level is below 10 ppm during an 8-hour period. OSHA's *Federal Register* notice also does not explicitly include the private standard's provision for a 25 ppm "acceptable ceiling concentration," nor does it mention the provisions related to air "sampling procedure and analytical methods."

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138. 29 U.S.C. § 652(9) (1994).

15. *Incorporation by Reference Today*. Lest students leave the lesson thinking that OSHA's adoption of a private standard in 1971 was some historical oddity, the lesson can be concluded by reminding students that hundreds of private standards development organizations exist and that federal agencies have incorporated by reference thousands of private standards across a broad range of regulatory domains. Indeed, federal law, in the form of the NTTAA, actually requires agencies to incorporate by reference whenever feasible and consistent with other statutory requirements. Section III.D of this Teaching Guide provides further background information that can inform the instructor's discussion of incorporation by reference.

16. *Policy Considerations with Reliance on Private Standards*. To conclude, the instructor can invite students to reflect on the role that private standards ought to play in informing or even providing the sole basis for government regulations. The treatment of policy tradeoffs in Section III.D of this Teaching Guide provides a helpful synopsis that an instructor can use either to wrap up the lesson with a concluding lecture on policy considerations or to guide a reflective concluding discussion with the class.

C. Full-Class Lesson Plan

Learning objective: To provide students with an understanding of private standards and how they are developed, and to help students begin to assess the underlying legal or policy considerations raised by government reliance on private standards.

Although the overall learning objective could remain the same for the full-class lesson as for a partial class session, the additional time available in a full class session can be used to inculcate a deeper understanding of private standards and their implications. Instructors can encourage students to engage in greater discussion, or additional time can be used to show some of the videos available at www.codes-and-standards.org that are relevant to this lesson.

The additional time can also be used to spend more time on incorporation by reference, which is only briefly introduced in this Teaching Guide but is covered in considerable depth in the course module developed by Professor Emily Bremer, available at www.codes-and-standards.org. Finally, the additional time could be used to facilitate a discussion around possible private nondelegation doctrine concerns raised by the OSH Act's requirement that OSHA initially adopt private standards as federal law without engaging in notice-and-comment rulemaking.

Class time: Sixty to eighty minutes.

Reading assignment: In addition to the readings assigned for the half-class session—that is, excerpts from the Supreme Court opinion in the Benzene Case and the original of the 1969 benzene standard—the instructor may wish to assign additional readings depending on how the additional half period for this lesson will be used. If the additional time will be used to explore incorporation by reference in greater detail, the instructor may find it useful to assign OMB Circular A-119[139] or § 12(d) of the NTTAA.[140]

Optional reading: The instructor may also wish to ask students to visit www.standardslearn.org, ANSI's online learning resource for private standards. The site contains various educational materials and a couple of short courses on the topic, from which one or more could be assigned.

Slides to use: The entire set could be used to take the students through the main points at the same pace as in the half-class lesson, thus allowing more time at the end for discussion or for covering additional related material (such as more on incorporation by reference or the exploration of the private nondelegation doctrine). Or the entire slide set could be used but at a pace that would allow a greater opportunity for student discussion and facilitated reflection along the way.

Discussion questions: Any or all of the discussion questions in Section IV of this Teaching Guide could be used, especially if the instructor planned to use a full class session so as to allow time for greater student discussion.

Outline for session: The outline contained in the plan for the half-class lesson could provide the basis at least for the first half of the full-class lesson. Then the instructor might refer to Professor Emily Bremer's Teaching Guide on incorporation by reference, also available at www.codes-and-standards.org to develop a plan for the remaining additional time. Both Teaching Guides are intended to spark the instructor's own creativity, and faculty are encouraged to pursue their own avenues with these materials.

VI. ADDITIONAL READINGS

Emily S. Bremer, *Incorporation by Reference in an Open-Government Age*, 36 HARV. J.L. & PUB. POL'Y 131 (2013).

Emily S. Bremer, *New Rules on Incorporated Standards Encourage Necessary Public-Private Collaboration*, REG. REV. (Jan. 27, 2015), https://www.theregreview.org/ 2015/01/27/ bremer-public-private-collab/.

139. *See* OFFICE OF MGMT. & BUDGET, *supra* note 123.

140. National Technology Transfer and Advancement Act of 1995 § 12(d), 15 U.S.C. § 272 note (2012).

Emily S. Bremer, *On the Cost of Private Standards in Public Law*, 63 U. KAN. L. REV. 279, 301–02 (2015).

Emily S. Bremer, *Technical Standards Meet Administrative Law: A Teaching Guide on Incorporation by Reference*, 71 ADMIN. L. REV. 307 (2019).

Robert W. Hamilton, *Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health*, 56 TEX. L. REV. 1329 (1978).

Thomas O. McGarity, *The Story of the Benzene Case: Judicially Imposed Regulatory Reform Through Risk Assessment*, *in* RICHARD LAZARUS & OLIVER HOUCK, EDS., ENVIRONMENTAL LAW STORIES (2011).

Nina A. Mendelson, *Private Control over Access to the Law: The Perplexing Federal Regulatory Use of Private Standards*, 112 MICH. L. REV. 737 (2014).

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Robert D. Moran, *Occupational Safety and Health Standards as Federal Law: The Hazards of Haste*, 15 WM. & MARY L. REV. 777 (1974).

Peter L. Strauss, *Private Standards Organizations and Public Law*, 22 WM. & MARY BILL RTS. J. 497 (2013).

Peter L. Strauss, *We Decline to Define "Reasonably Available,"* REG. REV. (Jan. 26, 2015), https://www.theregreview.org/2015/01/26/strauss-reasonably-available/.

APPENDIX: GLOSSARY

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
AIHA	American Industrial Hygiene Association
APA	Administrative Procedure Act
API	American Petroleum Institute
ExSC	ANSI Executive Standards Council
NIOSH	National Institute for Occupational Safety and Health
NTTAA	National Technology Transfer and Advancement Act of 1995
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
OSH Act	Occupational Safety and Health Act
PHMSA	Pipeline and Hazardous Materials Safety Administration
USASI	United States of America Standards Institute