On the Cost of Private Standards in Public Law

Emily S. Bremer[*]

I. INTRODUCTION

As the federal government has moved online, providing free electronic access to rulemaking dockets and regulations, one class of holdouts has become readily apparent: private standards incorporated by reference into regulations. Developed by private nonprofit organizations, copyrighted, and typically sold to fund the standards development process, private standards are essential to nearly every aspect of modern life. Agencies often make these voluntary standards mandatory by incorporating them by reference into federal regulations. Indeed, federal law and executive policy have long required agencies to use available voluntary consensus standards in this way, instead of creating "government-unique" standards solely to serve regulatory purposes.[1] This policy is an important part of an extensive, longstanding, and highly valuable public-private partnership in standards. One unfortunate consequence of incorporating private standards into regulation, however, is that the public must often pay a private party to see the full text of a proposed or final regulation.

What is the best way to make private, incorporated standards freely available to the public online? I have argued,[2] and the Administrative Conference of the United States has recommended,[3] that agencies should

---

[*] Senior Attorney and Research Coordinator, Administrative Conference of the United States. The views expressed here are those of the author and do not necessarily reflect those of the Administrative Conference, its committees, or its members. Thanks are due to Reeve Bull, Peter Strauss, Paul Verkuil, Amber Williams, and workshop participants at the University of Alabama, Notre Dame, and Southern Illinois University for thoughtful comments and suggestions on earlier drafts, to the agency officials and other individuals who took the time to discuss these issues with me, and to Blair Druhan for research assistance.

1. *See* National Technology Transfer and Advancement Act of 1995, Pub. L. No. 104-113, § 12(d), 110 Stat. 775 (1996) [hereinafter NTTAA]; OFFICE OF MGMT. & BUDGET, CIRCULAR A-119, FEDERAL PARTICIPATION IN THE DEVELOPMENT AND USE OF VOLUNTARY CONSENSUS STANDARDS AND IN CONFORMITY ASSESSMENT ACTIVITIES, 63 Fed. Reg. 8546, 8549 (Feb. 19, 1998) [hereinafter CIRCULAR A-119], *available at* http://www.whitehouse.gov/omb/circulars_a119.

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

3. *See* ADMIN. CONF. OF THE U.S., RECOMMENDATION 2011-5: INCORPORATION BY

work collaboratively with standards developers and use available electronic tools, such as read-only access, to facilitate free online availability without undermining the value of the copyright and the ability of the standards developers to recoup the significant costs standards development. The Office of Management and Budget (OMB) recently proposed adopting this approach as part of federal standards policy.[4] Others have argued, however, that free electronic access should be mandated in all cases, regardless of the implications for copyright, federal standards policy, or public safety.[5]

Until now, the incorporation by reference debate has proceeded at a high level of generality, allowing advocates on both sides to selectively highlight data points that support their understanding of the relevant facts and preferred solution to incorporation by reference's public access problem. No systemic analysis of the costs of incorporated standards or the viability of various proposed solutions has been possible. A government-wide quantitative analysis of these costs would require compiling cost and other data for the greater than 10,000 incorporations by reference of standards in the Code of Federal Regulations (CFR)—a truly daunting prospect.[6] A government-wide qualitative analysis would be even more difficult—and perhaps impossible. Whether the cost of a particular incorporated material is reasonable or can be reduced or

---

REFERENCE (2011), 77 Fed. Reg. 2257, 2257 (Jan. 17, 2012), *available at* http://www.acus.gov/sites/default/files/Recommendation-2011-5-Incorporation-by-Reference.pdf [hereinafter RECOMMENDATION 2011-5]. I acted as the Conference's in-house researcher for this recommendation. *See* Bremer, *supra* note 2, at 131 n.a1.

4. *See* Request for Comments on a Proposed Revision of OMB Circular No. A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," 79 Fed. Reg. 8207-01 (Feb. 11, 2014). The proposed revisions were not printed in the *Federal Register*, but are available on OMB's website at THE WHITE HOUSE, http://www.whitehouse.gov/sites/default/files/omb/inforeg/revisions-to-a-119-for-public-comments.pdf (last visited Dec. 20, 2014).

5. *See, e.g.*, Nina A. Mendelson, *Private Control Over Access to Public Law: The Perplexing Federal Regulatory Use of Private Standards*, 112 MICH. L. REV. 737, 747 (2014) ("I put the copyright and value questions to one side and instead attempt to focus on the reasons why and the extent to which law, including regulatory law, needs to be meaningfully available to the public."); Peter L. Strauss, *Private Standards Organizations and Public Law*, 22 WM. & MARY BILL RTS. J. 497 (2013) (arguing that, to the extent private standards are made mandatory in regulations, they must be freely accessible online); *see also* Lawrence A. Cunningham, *Private Standards in Public Law: Copyright, Lawmaking and the Case of Accounting*, 104 MICH. L. REV. 291 (2005) (examining these issues predominately through the lens of copyright).

6. *See Nat'l Inst. for Standards & Tech., Regulatory SIBR (P-SIBR) Statistics*, STANDARDS INCORPORATED BY REFERENCE DATABASE, https://standards.gov/sibr/query/index.cfm?fuseaction=rsibr.total_regulatory_sibr (last updated March 7, 2013) (showing 11,259 total incorporations by reference as of December 20, 2014).

eliminated depends on a combination of factors that vary widely across agencies, regulatory contexts, standards, and standards development organizations.[7] In the abstract, it is difficult to predict the consequences of any given approach to reducing the costs of incorporated materials. And it is impossible to evaluate whether those consequences—for public safety, private rights, regulatory and non-regulatory collaborative governance relationships, and other public needs and priorities—are acceptable.

This article addresses these challenges by offering a case study of incorporation by reference in the pipeline safety context.[8] In 2012, in Section 24 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Congress addressed the public availability of incorporated standards by imposing an uncompromising free access mandate on a single component agency of the Department of Transportation, the Pipeline and Hazardous Materials Safety Administration (PHMSA). Section 24 prohibited PHMSA from incorporating by reference into pipeline safety regulations or guidance any material not available to the public for free on the Internet.[9] The prohibition was prospective, with an effective date of January 2013, and so did not affect PHMSA's existing incorporations by reference. Nonetheless, the agency was forced to delay its usual updating schedule while it sought a way to implement Section 24 without violating federal standards policy, infringing copyright, or undermining public safety.[10]

This article examines PHMSA's use of regulatory incorporation by reference, the costs of the agency's incorporated standards, and its efforts to comply with Section 24's uncompromising free access mandate. It provides a detailed, data-driven analysis of the costs of the private standards and other materials incorporated by reference into federal pipeline safety regulations.[11] This analysis provides a more complete

---

7. *See* Bremer, *supra* note 2, at 145–47, 158–59, 180–83.

8. *See* Edward L. Rubin, Commentary, *The New Legal Process, the Synthesis of Discourse, and the Microanalysis of Institutions*, 109 HARV. L. REV. 1393, 1425–34 (1996).

9. *See* Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Pub. L. No. 112-90, § 24, 125 Stat. 1904, 1919 (codified at 49 U.S.C. §§ 60101 (2012)) [hereinafter Pipeline Safety Act].

10. *Cf.* Pipeline Safety: Periodic Updates of Regulatory References to Technical Standards and Miscellaneous Amendments, 78 Fed. Reg. 49,996, 49,997 (Aug. 16, 2013) (proposing to update certain incorporated standards and noting that previous updates were published in 2004, 2007, and 2010).

11. For purposes of simplicity, this article typically uses the term "standards" to refer collectively to the materials incorporated by reference into PHMSA's pipeline safety regulations. As I explain later, however, the incorporated materials include several non-standards materials, such as technical reports and software. *See infra* notes 219–22 and accompanying text.

picture of the costs of incorporated standards and reveals that, independently of Section 24's requirements, standards developers voluntarily provided free online access to a surprisingly large percentage of PHMSA's incorporated standards. The data also cast some doubt on the argument that a government-wide free access mandate is required because standards developers routinely engage in monopoly pricing, charging more for incorporated editions of standards simply because they are the law. This article further provides a qualitative analysis of the consequences of Section 24. After a year and a half of continuous effort to implement the law, PHMSA was able to successfully negotiate free access agreements with some—but not all—of its standards developers. In the end, the law did not much expand the free online availability of PHMSA's incorporated standards. Worst of all, the agency was unable to negotiate the agreements necessary to continue incorporating some of its most important (and expensive) standards. The law thus threatened PHMSA's ability to protect public safety by integrating federal regulatory requirements with an extensive, pre-existing private regulatory infrastructure.

PHMSA's experience provides strong additional support for a collaborative, non-comprehensive approach to incorporation by reference's public access problem. Indeed, in August 2013, Congress acknowledged that Section 24's aggressive approach proved unworkable when it amended the law, significantly softening its requirements.[12] The legislative history identified collaboration as the best path forward for agencies seeking to expand the public availability of incorporated standards, while simultaneously protecting public safety, complying with federal standards policy, and observing copyright.[13] Like PHMSA, other agencies should collaborate with standards developers to make the law more free. But when the ideal of free online access cannot be achieved, agencies must retain the flexibility to integrate private standards into public law as necessary to further the public interest and protect health and safety.

This article proceeds in four parts. Part II explores the multidimensional problem of public access to incorporated standards and explores competing approaches to improving the public availability of private standards incorporated by reference into federal regulations. Part III explains the importance of standardization, explores the vast and

12. *See* Availability of Pipeline Safety Regulatory Documents, Pub. L. No. 113-30, 127 Stat. 510 (2013).

13. *See* 159 CONG. REC. H4499 (daily ed. July 16, 2013) (statement of Rep. Eddie Bernice Johnson).

largely unknown world of private standards, and demonstrates why federal agencies must retain the ability to integrate private standards into public regulatory regimes. Part IV provides a detailed analysis of the standards incorporated into federal pipeline safety regulations and PHMSA's efforts to implement Section 24's strict requirements. Part V argues that a collaborative approach holds the greatest promise for addressing the multidimensional problem of public access to incorporated standards.

II. THE CHALLENGES OF ADDRESSING A MULTIDIMENSIONAL PROBLEM

Improving the public availability of incorporated standards is surprisingly difficult because the problem is multidimensional. The best approach must reconcile two apparently incompatible rights: the public's right to freely access the law and the private copyrights of standards developers. Moreover, this reconciliation must occur within the broader context of a longstanding, complex, and highly valuable public-private partnership in standards.

A. The Public Rights Dimension: Freedom of Information

An important administrative principle holds that federal agencies must make certain information, including regulatory proposals and legally binding regulations, available to the public. To that end, the Administrative Procedure Act (APA) requires agencies to publish notices of proposed rulemaking in a daily government publication, the *Federal Register*.[14] Similarly, the Freedom of Information Act (FOIA) requires agencies to publish regulations in the *Federal Register*,[15] for codification in a special annual edition, the *Code of Federal Regulations* (CFR).[16] By providing a central repository for key agency pronouncements, the *Federal Register* and CFR have long ensured that both the public and the government are aware of what federal regulations may (or do) require.[17]

---

14. *See* 5 U.S.C. § 553(b) (2012).

15. *See* 5 U.SC. § 552(a).

16. *See* 44 U.S.C. § 1510 (2012); *see also* Policy, 1 C.F.R. § 8.1(a) (2012) (explaining that the CFR is a special edition of the *Federal Register* that "present[s] a compact and practical code . . . contain[ing] each Federal regulation of general applicability and legal effect").

17. *See, e.g.*, Fed. Crop Ins. Corp. v. Merrill, 332 U.S. 380, 385 (1947) ("Congress has provided that the appearance of rules and regulations in the *Federal Register* gives legal notice of their contents"). *See generally* Panama Ref. Co. v. Ryan, 293 U.S. 388, 412 (1935) (preventing an agency from enforcing regulations that "did not exist"); Erwin N. Griswold, *Government in Ignorance of the Law—A Plea for Better Publication of Executive Legislation*, 48 HARV. L. REV. 198 (1934) (urging the creation of the *Federal Register*); Note, *The Federal Register and the Code of Federal*

An agency that violates these publication requirements will suffer the consequences. A proposed rule not properly noticed in the *Federal Register* will be invalidated or remanded.[18] And if an agency fails to publish a regulation as required, it will not be permitted to enforce that regulation except against parties that had "actual and timely notice" of the regulation's requirements.[19]

Congress and the Executive have supplemented these basic publication requirements by requiring agencies to disseminate certain information to the public electronically. Together, the Electronic Freedom of Information Act of 1996,[20] the Government Paperwork Elimination Act of 2000,[21] and the E-Government Act of 2002,[22] moved agencies into the digital age by mandating the use of electronic public reading rooms. Agencies also use electronic docketing for rulemaking and other administrative proceedings.[23] Congress has similarly amended the Federal Register Act[24] to require the Government Printing Office (GPO) to provide online access to the *Federal Register*[25] and CFR.[26]

Under FOIA, agencies can fulfill the basic obligation to publish regulations by incorporating by reference material that has already been published elsewhere. The provision that permits this is embedded in a freestanding paragraph at the end of 5 U.S.C. § 552(a)(1), which is primarily concerned with establishing the sanction (unenforceability) for agency non-publication:

> Except to the extent that a person has actual and timely notice of the terms thereof, a person may not in any manner be required to resort to,

---

Regulations—A Reappraisal, 80 HARV. L. REV. 439 (1966) (discussing how the CFR and the *Federal Register* have made regulations of administrative agencies available to the public).

18. *See, e.g.*, PPG Indus., Inc. v. Costle, 659 F.2d 1239, 1249–51 (D.C. Cir. 1981).

19. 5 U.S.C. § 552(a); s*ee* Appalachian Power Co. v. Train, 566 F.2d 451, 455 (4th Cir. 1977).

20. Electronic Freedom of Information Act of 1996, Pub. L. No. 104-231, 110 Stat. 3048.

21. Government Paperwork Elimination Act (GPEA), Title XVII, Pub. L. No. 105-277, 112 Stat. 2681 (1998).

22. E-Government Act of 2002, Pub. L. No. 107-347, 116 Stat. 2899.

23. Executive branch agencies are required to use the Federal Docket Management System (FDMS) and its public-facing web portal, http://www.regulations.gov. *See, e.g.*, Exec. Order No. 13563, 76 Fed. Reg. 3821, 3822 (Jan. 18, 2011). Independent agencies may use this infrastructure or create and manage their own solutions. *See, e.g.*, *Electronic Comment Filing System*, FED. COMMC'NS COMM'N, http://apps.fcc.gov/ecfs// (last visited Dec. 20, 2014).

24. *See* 44 U.S.C. § 4101(a)(2) (2012).

25. *See* FEDERAL REGISTER, www.federalregister.gov (last visited Dec. 20, 2014).

26. *See Electronic Code of Federal Regulations*, U.S. GOV'T PRINTING OFFICE, www.ecfr.gov (last visited Dec. 20, 2014). This e-CFR provides the requisite public access, but at this time is not the legally authoritative version of the CFR. *See* Bremer, *supra* note 2, at 190 n.258.

> or be adversely affected by, a matter required to be published in the Federal Register and not so published. For the purpose of this paragraph, matter reasonably available to the class of persons affected thereby is deemed published in the Federal Register when incorporated by reference therein with the approval of the Director of the Federal Register.[27]

The Office of the Federal Register (OFR) has issued regulations and guidance that flesh out these requirements and establish the process agencies must go through to secure OFR's approval to incorporate by reference.[28] Courts will not permit an agency to enforce incorporated material if it has not fulfilled these requirements and secured OFR's approval.[29] Although the statute appears to require OFR approval only at the final rule stage,[30] OFR recently revised its regulations to, among other things, require agencies to seek "informal" approval at the proposed rule stage.[31] The revised regulations will also require agencies to include in the preamble to proposed and final rules: (1) a discussion of the steps taken to ensure the reasonable availability of any incorporated materials, and (2) a summary of the content of those materials.[32]

---

27. 5 U.S.C. § 552(a)(1)(E) (2012). As Professor Kenneth Culp Davis explained in remarks to the Senate Judiciary Committee when FOIA was under consideration, there is some "inconsistency between the unqualified requirement [in § 552(a)(1)] that the various documents be published" and the subsequent provision that permits agencies to meet that requirement via incorporation by reference. STATEMENT OF PROFESSOR KENNETH CULP DAVIS, S. COMM. ON THE JUDICIARY, HEARINGS BEFORE THE SUBCOMMITTEE ON ADMINISTRATIVE PRACTICE AND PROCEDURE ON S. 1663 TO AMEND THE ADMINISTRATIVE PROCEDURE ACT, AND FOR OTHER PURPOSES 246 (1964). Professor Davis further stated that "[e]ither incorporation by reference should be allowed or it should not; the draftsman can't have it both ways at the same time." *Id.* Congress enacted the law without modification, however, and the strange structure and placement of the incorporation by reference provision may be one factor that has contributed to recent disagreement about how to interpret and apply the provision in the Internet age.

28. *See* Incorporation by Reference, 1 C.F.R. pt. 51 (2012) (detailing regulations on incorporation by reference); *see also What is Incorporation by Reference, and How do I do it?*, *in* FED. REGISTER DOCUMENT DRAFTING HANDBOOK, 2011 NAT'L ARCHIVES & RECORDS ADMIN. ch. 6 (Jan. 2011), *available at* http://www.archives.gov/federal-register/write/handbook/ddh.pdf (detailing OFR guidance on incorporation by reference).

29. *See* Appalachian Power Co. v. Train, 566 F.2d 451, 455 (4th Cir. 1977).

30. *See* Letter from Office of the Chairman, Admin. Conference of the U.S., to Michael L. White, Acting Dir., Office of the Fed. Register (June 1, 2012) [hereinafter Admin. Conf. Letter to White], *available at* http://www.acus.gov/sites/default/files/documents/Final-ACUS-Response-to-OFR-Petition-6-1-12.pdf.

31. *See* Incorporation by Reference, 79 Fed. Reg. 66,267 (Nov. 7, 2014). The final rule concluded a rulemaking proceeding that began with a petition for rulemaking filed in 2012. *See* Incorporation by Reference, 77 Fed. Reg. 11,414 (Feb. 27, 2012) (to be codified at 1 C.F.R. pt. 51); *see also* Incorporation by Reference, 78 Fed. Reg. 60,784, 60,797 (Oct. 2, 2013) (partially granting the petition and proposing revisions to OFR's incorporation by reference regulations).

32. *See* Incorporation by Reference, 79 Fed. Reg. 66,267, 66,267 (Nov. 7, 2014).

Private publications incorporated by reference are frequently copyrighted and may be available to the public only by purchase from a private organization.[33] As a practical matter, this means that the public may have to pay a private party to gain access to the full text of a proposed or final regulation. The traditional method of addressing this issue has been to require promulgating agencies and OFR to maintain a copy of each incorporated material in a public reading room.[34] This same approach was used to make rulemaking dockets available to the public before the transition to electronic docketing and rulemaking. Although some agencies (including PHMSA)[35] have public reading rooms in regional offices located throughout the country, it is not uncommon for an agency's only public reading room to be located in Washington, D.C. OFR is the only agency that maintains a full collection of all materials incorporated by reference in the CFR. The public can access this collection, but only by visiting OFR or other offices of the National Archives and Records Administration (NARA), all of which are located in the Washington, D.C. metro area.[36]

The cost to access privately authored incorporated materials online varies widely[37]—some such materials are available for free, but others may cost hundreds of dollars.[38] Even if a publication is available for free, it may be protected by digital rights management solutions, such as those used to facilitate read-only access. The worst-case scenario is when an incorporated material is out-of-print, in which case it may not be available online at any price.[39] OFR does not consider the price of incorporated material when deciding whether to approve an agency's request to incorporate by reference.[40] And although the agency works to prevent the incorporation of out-of-print materials through its

33. Agencies often incorporate by reference to avoid infringing copyright. *See* Bremer, *supra* note 2, at 155.

34. *See id.* at 153.

35. *Introduction to Standards Incorporated by Reference*, PHMSA, http://phmsa.dot.gov/pipeline/regs (follow hyperlink "Introduction to Standards Incorporated by Reference") (last visited Dec. 17, 2014).

36. *See Incorporation by Reference: Where to Find Materials Incorporated by Reference at NARA Facilities*, NAT'L ARCHIVES & RECORDS ADMIN., http://www.archives.gov/federal-register/cfr/ibr-locations.html (last visited Dec. 20, 2014).

37. Standards development organizations typically sell both hard and electronic copies of standards.

38. *See infra* Part III.B.

39. *See infra* notes 222–30 and accompanying text.

40. *See* Incorporation by Reference, 1 C.F.R. pt. 51 (2012). The revised regulations, which are scheduled to become effective on January 6, 2015, retain this characteristic of OFR's approval process. *See* Incorporation by Reference, 79 Fed. Reg. 66,267, 66,272-73 (Nov. 7, 2014).

incorporation by reference approval process, it cannot eradicate the possibility that an incorporated material will go out-of-print or otherwise become unavailable after the incorporating regulation has been approved, published, and codified.[41]

Since the federal government began providing free online access to rulemaking dockets and regulations, the costs of electronic access to incorporated materials have become both obvious and controversial.[42] Some have argued that incorporated materials must always be available online free of charge both during the rulemaking process and after a final incorporating regulation is promulgated.[43] But the law does not require incorporated materials to be available for free online. Under FOIA, incorporated materials must be "reasonably available to the class of person affected."[44] "Reasonably available" is not so stringent a standard as "freely available."[45] The legislative history of the provision,[46] which was enacted in 1966 to address concerns that too much material was being published in the *Federal Register*,[47] also reveals that Congress expected agencies to incorporate by reference privately published, copyrighted material. More specifically, Congress contemplated incorporation of material found in professional publications, such as those of the West Company and Commerce Clearing House.[48] Such publications are copyrighted, fairly expensive, and rarely available in

41. *See* Incorporation by Reference, 79 Fed. Reg. 66,267, 66,274 (Nov. 7, 2014); *see also*, *infra* notes 222–230 and accompanying text.

42. *Cf.* Timothy B. Lee, *The Case Against PACER: Tearing Down the Courts' Paywall*, ARS TECHNICA (Apr. 8, 2009, 11:30 PM), http://arstechnica.com/tech-policy/2009/04/case-against-pacer/ (arguing government should not charge for online access to judicial opinions, just as it does not charge for access to other government information portals, such as recovery.gov and regulations.gov).

43. *See generally* Mendelson, *supra* note 5 (addressing the importance of easily accessible federal regulatory standards and arguing for various solutions).

44. 5 U.S.C. § 552(a)(1) (2012).

45. *See generally* Admin. Conf. Letter to White, *supra* note 30 (noting that "as a matter of law, 'reasonably available' does not mean that an incorporated material must be available for free online").

46. FOIA's complete legislative history is available online in George Washington University's National Security Archive. *See FOIA Legislative History*, GEORGE WASHINGTON UNIVERSITY, http://www.gwu.edu/~nsarchiv/nsa/foialeghistory/legistfoia.htm (last visited Dec. 20, 2014).

47. *See* Act of July 4, 1966, Pub. L. No. 89-487, 80 Stat. 250. The 1966 amendments became effective in 1967, *see id.*, and the statute was further revised that same year. *See* Act of June 5, 1967, Pub. L. No. 90-23, 81 Stat. 54, with largely non-substantive amendments to the incorporation by reference provision; *see also, e.g.*, S. REP. NO. 88-1219, at 11 (1964) ("[T]here have been few complaints about omission from the Federal Register of necessary official material. In fact, what complaints there have been have been more on the side of *too much* publication rather than *too little*.").

48. *See* S. REP. NO. 88-1219, at 4 (1964).

libraries open to the general public.[49] The Attorney General's memorandum on FOIA, issued shortly after the incorporation by reference provision was adopted, further supports interpreting "reasonably available" to permit some charge or other reasonable restriction of the availability of incorporated materials.[50]

Another apparent deficiency in FOIA's incorporation by reference standard is its exclusive concern with ensuring reasonable availability for regulated parties.[51] This is reflected in the statute's text, which requires that incorporated materials be "reasonably available to the class of persons affected thereby."[52] It is further indicated by the previously mentioned strange structure of the provision. The authorization to incorporate by reference "matter reasonably available to the class of person affected thereby" is embedded in the paragraph providing that "a person may not in any manner be required to resort to, or be adversely affected by, a matter required to be published in the Federal Register and not so published."[53] Read holistically, the paragraph thus conveys a singular concern with the rights of regulated parties, who may be "required to resort to" or may "be adversely affected by" incorporated material.[54] In this age of open government and e-rulemaking, however, administrative law and policy have properly sought to expand access to agency processes and regulations beyond regulated parties, to the entire American public.[55]

In fact, the law does not require even that regulations—whether in print or electronic format—be free to regulated parties or the public. GPO is authorized to charge the public for its publications, including the

---

49. The collections of most general public libraries do not include, for example, West Reporters. *See, e.g.*, *Catalog*, LONGMONT PUBLIC LIBRARY, http://library.ci.longmont.co.us/ipac20/ipac.jsp?profile= (last visited Dec. 20, 2014). State or local bar associations may have lending libraries, but they are typically open to bar members only and may not include substantive publications. *See, e.g.*, *Lending Library*, COLORADO BAR ASS'N, http://www.cobar.org/index.cfm/ID/17/CLPE/Lending-Library/ (last visited Dec. 20, 2014). Law school libraries are typically not open to the general public. *See, e.g.*, *Access: Using the Law Library*, NEW YORK UNIV. SCHOOL OF LAW, http://www.law.nyu.edu/library/generalinformation/access/index.htm (last visited Dec. 20, 2014) ("The Law Library is not open to the general public."). Private publications are ineligible for inclusion in Federal Depository Libraries. *See infra* Part IV.C.

50. Ramsey Clark, A Memorandum for the Executive Departments and Agencies Concerning Section 3 of the Administrative Procedure Act as Revised Effective July 4, 1967 (June 1967), *available at* http://www.justice.gov/oip/67agmemo.htm [hereinafter *Attorney General's Memorandum*].

51. *See* Admin. Conf. Letter to White, *supra* note 30.

52. 5 U.S.C. § 552(a)(1)(E) (2012).

53. 5 U.S.C. § 552(a)(1).

54. *See* Bremer, *supra* note 2, at 156–57; *see also* Admin. Conf. Letter to White, *supra* note 30.

55. *See* Bremer, *supra* note 2, at 157.

Federal Register and CFR, at a price sufficient to cover the cost of printing plus fifty percent.[56] This cost of course does not include the costs of developing the substance of what GPO publishes. The agencies themselves bear those costs, expending significant staff time and appropriated funds to develop regulations and take other action that is ultimately published by GPO.[57] Nonetheless, a one-year subscription to the print edition of the *Federal Register* currently costs $929.00.[58] A one-year subscription to the print edition of the CFR costs $1,804.00.[59] Electronic subscriptions (presumably intended for institutional purchasers and available via either File Transfer Protocol (FTP) or CD-ROM) are significantly more expensive—as much as $17,325.00 for the CFR and $17,250.00 for the *Federal Register*.[60] GPO is also required to provide online access to the *Federal Register* and CFR,[61] and Congress has authorized the agency to charge for it.[62] To its credit, GPO has so far declined to use that authority, and the public may therefore access the *Federal Register* and CFR on the Internet for free.[63]

Regardless of what the law requires, however, it is sound administrative policy to make incorporated materials freely available to the public online.[64] During the rulemaking process, regulated and other interested parties may need access to a private standard or other material in order to meaningfully comment on an agency's proposal to

---

56. *See* 44 U.S.C. § 1708 (2012).

57. Agencies also pay GPO to publish in the *Federal Register* and maintain regulations annually in the CFR. These payments can seem quite significant to an agency focused on extending limited funding, but they are dwarfed by the full costs of rulemaking and other agency activities.

58. *Annual Federal Register Print Subscription*, U.S. GOV'T BOOKSTORE, GOV'T PRINTING OFFICE, http:// bookstore.gpo.gov/products/sku/769-004-00000-9 (last visited Dec. 20, 2014).

59. *Annual CFR Print Subscription*, U.S. GOV'T BOOKSTORE, GOV'T PRINTING OFFICE, http://bookstore.gpo.gov/catalog/laws-regulations/code-federal-regulations-cfrs-print/annual-cfr-print-subscription (last visited Dec. 20, 2014).

60. *Electronic Data Products*, U.S. GOV'T BOOKSTORE, GOV'T PRINTING OFFICE, http://bookstore.gpo.gov/Electronic-Data-Products (last visited Dec. 20, 2014).

61. *See* 44 U.S.C. § 4101(a)(2).

62. *See* 44 U.S.C. § 4102.

63. Some have questioned whether GPO can continue providing this free access as revenues from its various print products decline and GPO faces other budgetary pressures. *See* NAT'L ACAD. OF PUB. ADMIN., 2170, REBOOTING THE GOVERNMENT PRINTING OFFICE: KEEPING AMERICA INFORMED IN THE DIGITAL AGE (Jan. 2013). *But see* Letter from Candice S. Miller, Chairman, and Robert A. Brady, Ranking Member, Comm. on House Admin., U.S. House of Representatives, to Hon. Davita Vance-Cooks, Acting Pub. Printer, U.S. Gov't Printing Office (May 21, 2013), http://cha.house.gov/sites/republicans.cha.house.gov/files/documents/committee_docs/CHA%20Letter%20-%20Free%20Access%20to%20Government%20Information%20-%205%2022%2013.pdf (urging GPO not to follow the National Academy's recommendation to charge for online access because "in the interest of transparency and accessibility, the documents of our democracy should be available to all Americans electronically, in perpetuity, and for free").

64. *See* RECOMMENDATION 2011-5, *supra* note 3, at ¶ 1.

incorporate it by reference. Legally binding regulations, including any material incorporated by reference therein, should be readily available to all. In short, we need to find a way to account for how technology has changed the public's needs and expectations for transparency and online access.[65]

The first challenge to implementing this policy ideal to its fullest extent—that is, by providing free online access to incorporated materials—is copyright, considered in the next section.

B. The Private Rights Dimension: Copyright

As a general rule, the law cannot be copyrighted. The Supreme Court established this rule in the nineteenth century, in the cases of *Wheaton v. Peters*[66] and *Banks v. Manchester*.[67] These cases address the question of whether a reporter of federal or state judicial opinions acquires copyright in the judicial opinions themselves. *Wheaton* addresses the issue only briefly and in dicta, in the last line of Justice McLean's majority opinion: "It may be proper to remark that the court are unanimously of opinion, that no reporter has or can have any copyright in the written opinions delivered by this court; and that the judges thereof cannot confer on any reporter any such right."[68] The case was, however, decided (and not unanimously) on other grounds.[69] In *Banks*, the question of a reporter's copyright in judicial opinions was squarely presented, providing an opportunity for the Court to elaborate. Here, the Court held that, under the federal copyright statute, a reporter could acquire no copyright because he "was not the author, inventor, designer, or proprietor of the syllabus, the statement of the case, or the decision or opinion of the court."[70] Indeed, as public servants paid a salary to perform their work, judges could not themselves acquire copyright in their opinions.[71] Beyond the issue of authorship, the Court observed that, as a matter of "public policy," the "work done by the judges constitutes the authentic exposition and interpretation of the law, which, binding every citizen, is free for publication to all, whether it is a

---

65. *Cf.* Orin S. Kerr, *Foreword: Accounting for Technical Change*, 36 HARV. J.L. & PUB. POL'Y 403 (2013) (noting how technology like cell phones can necessitate legal changes).

66. 33 U.S. 591 (1834).

67. 128 U.S. 244 (1888).

68. *Wheaton*, 33 U.S. at 668.

69. *See generally id.* at 654–68 (remanding case for factual determination as to whether author strictly adhered to copyright statutes).

70. *Banks*, 128 U.S. at 252.

71. *See id.* at 253, 254.

declaration of unwritten law, or an interpretation of a constitution or a statute."[72] Today, the Copyright Act provides that "[c]opyright protection . . . is not available for any work of the United States Government,"[73] and it is well established that reporters have copyright only in the material they author and publish as supplement to the law.[74]

The hard question is how this rule applies when the government elects to give legal effect to materials that are, in the first instance, privately authored and copyrighted.[75] On this question, there is little judicial guidance and much ambiguity. The only case directly on point is the Fifth Circuit's 2002 en banc decision in *Veeck v. Southern Building Code Congress, Inc*.[76] In *Veeck*, a sharply divided court held that once a state or local government adopts a model code as law, the private author of the code, having intended that its work be adopted as law, cannot assert copyright over the code qua law.[77] The court offered two intertwined rationales for this outcome: (1) once adopted as law, the privately authored code enters the public domain because the citizens' right to read the law cannot be subject to the whims of a private copyright owner;[78] and (2) upon adoption, the model code's expression merges with the "fact" that is "the law," and is thus no longer eligible for copyright protection.[79] The court further said, however, that a case involving the incorporation by reference of extrinsic standards into the law would be "distinguishable in reasoning and result."[80] In a footnote, the majority cited OMB Circular A-119, suggesting that it had federal regulatory incorporation of private standards particularly in mind.[81]

---

72. *Id.* at 253.

73. 17 U.S.C. § 105 (2012). This rule does not extend to the work of state governments, *see, e.g.*, Nat'l Conference of Bar Exam'rs v. Multistate Legal Studies, Inc., 495 F. Supp. 34 (N.D. Ill. 1980), *aff'd*, 692 F.2d 478 (7th Cir. 1982), which sometimes assert copyright over state statutes and regulations.

74. *See, e.g.*, L. Ray Patterson & Craig Joyce, *Monopolizing the Law: The Scope of Copyright Protection for Law Reports and Statutory Compilations*, 36 UCLA L. REV. 719, 723 (1989) ("[W]hile law is not copyrightable, the 'literary works' that embody it are.").

75. I have previously argued that the doctrine of fair use is of little help to an agency seeking to find a way to provide free online access to incorporated materials. *See* Bremer, *supra* note 2, at 160–67. Government use of copyrighted work is not necessarily a fair use. *See* Memorandum from Randolph D. Moss, Acting Assistant Attorney General, to Andrew J. Pincus, General Counsel, Dep't of Commerce (April 30, 1999), *available at* http://www.loc.gov/flicc/gc/fairuse.html.

76. 293 F.3d 791 (5th Cir. 2002). The First Circuit has commented on these issues, but only in dicta. *See* Bldg. Officials & Code Admin. v. Code Tech., Inc., 628 F.2d 730, 732–35 (1st Cir. 1980).

77. *See Veeck*, 293 F.3d at 793. But the author retains copyright in the model code itself. *See id.*

78. *See id.* at 799–800.

79. *See id.* at 800–02.

80. *Id.* at 804.

81. *See id.* at 804 n.20.

Several other circuits have similarly held that a private author's copyright generally survives the government's subsequent incorporation by reference of the work.[82]

It is an open question whether the courts would, if presented with the opportunity, reaffirm *Veeck* and extend its holding to standards incorporated by reference in federal regulations. Even as far as it went, the decision was controversial.[83] The district court and the Fifth Circuit panel both held that adoption of the code as law did not abrogate the code developer's copyright.[84] Sitting en banc, the Fifth Circuit resolved the case on a closely divided vote of eight to six, generating two powerful dissents.[85] Invited to express the views of the United States,[86] the Solicitor General urged the Supreme Court to deny certiorari.[87] Although urging that the Fifth Circuit decided the case correctly,[88] the brief reveals some anxiety regarding the potential consequences of the decision on federal standards policy.[89] In a case involving continued copyright in standards incorporated by reference into federal regulations, the United States might well defend the standards developers' copyrights as part of a broader defense of federal standards policy.[90]

Two cases recently filed in the U.S. District Court for the District of Columbia squarely present the question of continued copyright protection for standards incorporated by reference into federal regulations. For several years, Carl Malamud, a well-known transparency advocate and founder of Public.Resource.org, has posted

---

82. *See, e.g.*, Practice Mgmt. Info. Corp. v. Am. Med. Ass'n, 121 F.3d 516, 520 (9th Cir. 1997); CCC Info. Servs., Inc. v. Maclean Hunter Mkt. Reports, 44 F.3d 61, 74 (2d Cir. 1994).

83. *See, e.g.*, Katie M. Colendich, Comment, *Who Owns "The Law"? The Effect on Copyrights When Privately-Authored Works are Adopted or Enacted by Reference into Law*, 78 WASH. L. REV. 589, 590 (2003) (arguing that the *Veeck* decision "created an unsupported exception to copyright law").

84. *See* Veeck v. S. Bldg. Code Cong. Int'l, Inc., 49 F. Supp. 2d 885, 891 (E.D. Tex. 1999); *see also* Veeck v. S. Bldg. Code Cong. Int'l, Inc., 241 F.3d 398, 403 (5th Cir. 2001). Judge Wiener authored the majority opinion for the panel and was joined by Judge Stewart. Judge Little, sitting by designation from the Western District of Louisiana, dissented on essentially the same grounds as the subsequent en banc majority.

85. *See* Veeck v. S. Bldg. Code Cong. Int'l, Inc., 293 F.3d 791, 806–08, 808–26 (5th Cir. 2002).

86. *See* S. Bldg. Code Cong. Int'l, Inc. v. Veeck, 537 U.S. 1043 (2002).

87. *See* Brief for United States as Amicus Curiae, S. Bldg. Code Cong. Int'l, Inc. v. Veeck, 539 U.S. 969 (2003) (No. 02-355).

88. *See id.* at 8.

89. *See, e.g.*, *id.* at 18 (acknowledging that "the continued ability of private standards organizations to develop and update their materials at a high level of quality and integrity is of substantial importance to the federal government," but urging that Supreme Court review was unnecessary because the Fifth Circuit's decision did not extend to standards incorporated by reference in federal regulations).

90. *See infra* Part II.0.

state and local codes online, irrespective of copyright,[91] virtually daring the code developers to sue him. None of the affected organizations so much as sent Mr. Malamud a takedown notice and, in the spring of 2012, he expanded his initiative to include all standards incorporated by reference in federal regulations.[92] In August 2013, three standards developers—the American Society for Testing and Materials (ASTM), the National Fire Protection Association (NFPA), and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.—filed a complaint seeking injunctive relief for copyright violation against Public.Resource.org.[93] In May 2014, the American Educational Research Association, American Psychological Association, and National Council on Measurement in Education filed a similar complaint in the same court. The plaintiffs in these cases are not seeking damages, and the complaints appear to raise the copyright issues cleanly, so the litigation may prove to be excellent vehicles for resolving some of the ambiguity created by *Veeck*.

Some have argued that legislative action is necessary to definitively address these complex copyright questions. For example, in May 2013, Public.Resource.Org organized a petition urging Congress to amend the Copyright Act to include a provision stating that "[e]dicts of government, such as judicial opinions, administrative rulings, legislative enactments, public ordinances, and similar official legal documents are not copyrightable for reasons of public policy. This applies to such works whether they are Federal, State, or local as well as to those of foreign

---

91. *See, e.g.*, Tim Stanley, *Building Codes, State Codes & Regulations from Carl Malamud & Public.Resource.org*, JUSTIA LAW, TECHNOLOGY & LEGAL MARKETING BLOG (Sept. 7, 2008), http://onward.justia.com/2008/09/07/building-codes-state-codes-regulations-from-carl-malamud-public-resource-org/.

92. *See, e.g.*, Alex Goldman, *Carl Malamud is Making Laws More Public*, ON THE MEDIA BLOG (May 15, 2012, 10:21 AM), http://www.onthemedia.org/story/199276-making-laws-more-public/transcript/. Mr. Malamud sent an attention-grabbing package announcing the plan to a number of federal agencies (including the Administrative Conference) and major standards development organizations, opening a public comment period before the first standard would be posted on a date certain. *See* Alex Goldman, *Carl Malamud's Box of Goodies*, ON THE MEDIA BLOG (April 13, 2012, 11:20 AM), http://www.onthemedia.org/blogs/on-the-media/2012/apr/13/carl-malamuds-box-goodies/.

93. *See* Complaint, Am. Educ. Research Ass'n, Inc. v. Public.Resource.org, Inc., No. 14-857 (D.D.C. May 23, 2014); Complaint, Am. Soc'y for Testing & Materials, Inc. v. Public.Resource.org, Inc., No. 13-1215 (D.D.C. Aug. 6, 2013). A similar, previously filed action was swiftly terminated. In early 2012, Public.Resource.org filed a preemptive declaratory judgment action in the Northern District of California against the Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACCNA), which was apparently the first affected organization to send Mr. Malamud a takedown notice. *See* Complaint, Public.Resource.org v. Sheet Metal and Air Conditioning Contractors' Nat'l Ass'n, No. 13-0815 (N.D. Cal.). SMACCNA at first refused to defend the action, but then swiftly settled.

governments."[94] As the petition acknowledges, this provision largely restates existing law. Even if it was added to the Copyright Act, it would not clearly strip copyright protection for privately authored materials subsequently given legal effect through government adoption or incorporation. A more definitive amendment would be required to achieve that result. As the *Veeck* litigation and the ongoing debate over public access to incorporated materials demonstrate, however, a more definitive amendment would be controversial and might face an uphill battle in Congress.

Stripping copyright protection for incorporated materials is a poor solution to the public access problem: it would be both under- and over-inclusive and would create new problems of its own. It would be under-inclusive because it would not address the need for public access during the rulemaking stage, before a material is incorporated by reference and becomes law. It would be over-inclusive because it would punish the many private publishers that already provide free online access. Indeed, in the public debate over this issue, many erroneously convey the impression that copyright is synonymous with for-pay access.[95] Those who advocate for stripping incorporated standards of copyright protection also overlook the potential *public* benefits of preserving copyright. It provides an incentive for private standards development, funding the development of essential standards that convey significant public benefits.[96] If not through fees for published standards, the public will have to pay the significant costs of standards development through some other mechanism. Copyright also provides the standards developer with the legal right and incentive to ensure that third parties are not disseminating erroneous or incomplete versions of its standards. Finally, if the government stripped copyright protection for incorporated materials, whether through legislation or litigation, affected copyright owners may have a viable takings claim.[97]

---

94. *The Edicts of Government Amendment*, PUBLIC.RESOURCE.ORG, https://public.resource.org/edicts/ (last visited Dec. 20, 2014); *see* Mike Masnick, *One Simple Copyright Reform Idea: Government Edicts Should Never Be Subject to Copyright*, TECHDIRT (May 16, 2013, 3:01 PM), http://www.techdirt.com/articles/20130516/01413623104/one-simple-copyright-reform-idea-government-edicts-should-never-be-subject-to-copyright.shtml.

95. As discussed below, a surprisingly large share of the private, copyrighted standards incorporated into federal pipeline regulations are available for free online. *See infra* Part IV.B.

96. *See, e.g.*, Veeck v. S. Bldg. Code Cong. Int'l, Inc., 293 F.3d 791, 816–817 (5th Cir. 2002) (Wiener, J., dissenting) (noting some private sector not-for-profits rely on the sales revenues of their model codes).

97. *See* CCC Info. Servs., Inc. v. Maclean Hunter Mkt. Reports, 44 F.3d 61, 74 (2d Cir. 1994). Depending on how such a takings claim arose, copyright owners may have to be wary of the jurisdictional bar imposed by 28 U.S.C. § 1500. *See generally* Emily S. Bremer & Jonathan R.

The most complex and challenging barrier to free online access to incorporated materials, considered in the next section, is the need to preserve the longstanding federal standards policy that has successfully cultivated an ongoing and highly valuable public-private partnership in standards.

C. A Hybrid Third Dimension: The Public-Private Partnership in Standards

For the past several decades, federal law and policy have generally required federal agencies to use available voluntary consensus standards in regulations,[98] in lieu of creating so-called "government-unique" standards solely to serve regulatory purposes. This policy has roots in a 1978 Administrative Conference recommendation,[99] which was swiftly embraced by the Executive with the 1982 issuance of Circular A-119.[100] In its most recent iteration, finalized in 1998, Circular A-119 provides that "federal agencies must use voluntary consensus standards in lieu of government-unique standards . . . except where inconsistent with law or otherwise impractical."[101] If an agency decides to create its own standard

---

Siegel, *Clearing the Path to Justice: Reform of 28 U.S.C. 1500*, 65 ALA. L. REV. 1 (2013) (arguing that Congress should repeal § 1500 to allow plaintiffs to have multiple claims against the United States in different courts).

98. As explained in greater detail below, *see infra* notes 160-165 and accompanying text, voluntary consensus standards are a particular type of private technical standard created using procedures designed to generate consensus among diverse participants and respect due process.

99. *See* Admin. Conference of the U.S., Recommendation 78-4, Federal Agency Interaction with Private Standard-Setting Organizations in Health and Safety Regulation, 44 Fed. Reg. 1357 (Jan. 5, 1979); *see also* Robert W. Hamilton, *The Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health*, 56 TEX. L. REV. 1329, 1379–86 (1978) (evaluating the benefits and limitations of agencies using voluntary consensus standards in safety and health regulation).

100. *See* CIRCULAR A-119, *supra* note 1. Circular A-119 was first proposed in the 1970s but was not issued in final form until 1980. *See* Federal Participation in the Development and Use of Voluntary Standards; Final Issuance, 45 Fed. Reg. 4326 (Jan. 21, 1980). This first final version of the circular, however, applied only to procurement activities, *see id.*, and the policy was not extended to regulatory activities until 1982, *see* Issuance of Circular A-119, "Federal Participation in the Development and Use of Voluntary Standards," 47 Fed. Reg. 49,496 (Nov. 1, 1982); ROSS E. CHEIT, SETTING SAFETY STANDARDS: REGULATION IN THE PUBLIC AND PRIVATE SECTORS 6 (1990).

101. CIRCULAR A-119, *supra* note 1 at ¶ 6. OMB has recently released for public comment a further revised version of Circular A-119, which addresses, among other things, incorporation by reference issues. *See* Request for Comments on a Proposed Revision of OMB Circular No. A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities", 79 Fed. Reg. 8207 (Feb. 11, 2014); *see also* Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 77 Fed. Reg. 19,357 (Mar. 30, 2012) (inviting input from interested parties "regarding Federal agencies' standards and conformity assessment related activities" and how to

instead of using an available voluntary consensus standard, it must justify that decision in an annual report to OMB.[102] Congress codified this requirement in the National Technology Transfer and Advancement Act of 1995, commonly referred to as the "Tech Transfer Act."[103]

Incorporation by reference is the primary method agencies use to comply with this federal standards policy in the regulatory context. This necessary drafting technique enables agencies to integrate private standards into federal regulatory requirements without infringing the standards developers' copyrights. Indeed, Circular A-119 itself directs agencies to "observe and protect the rights of the copyright holder."[104] In some cases, incorporation by reference may also be required because the size or format of the material is such that it cannot be printed in the *Federal Register* and CFR. Good examples include schematics, maps,[105] and non-print materials such as software. According to the Standards Incorporated by Reference Database (SIBR) maintained by the National Institute for Standards and Technology (NIST),[106] there are now greater than 10,000 incorporations by reference of standards, including voluntary consensus standards, government-unique standards, private industry standards, and international standards, in the CFR.[107]

D. Conflicting Approaches to the Public Access Problem

How do we expand public access to incorporated standards within the complex, multidimensional parameters of administrative process, private copyright, and federal standards policy? For the last several years, the debate over this question has raged and a variety of solutions have been put forward. I have argued that a collaborative solution holds the greatest promise for expanding free online access to incorporated materials without undermining the highly valuable public-private partnership in standards.[108] In December 2011, the Administrative

---

revise or supplement Circular A-119).

102. CIRCULAR A-119, *supra* note 1, at ¶ 9.

103. *See* NTTAA, *supra* note 1.

104. CIRCULAR A-119, *supra* note 1, at ¶ 6(j).

105. *See* Bremer, *supra* note 2, at 142.

106. NIST is a non-regulatory federal agency that conducts research, maintains core standards of measurement, and helps to coordinate private and public standards activities. *See infra* notes 157, and 221; *see also* Bremer, *supra* note 2, at 188–90 (describing NIST's responsibilities under the Tech Transfer Act and Circular A-119).

107. *See Regulatory SIBR (P-SIBR) Statistics*, *supra* note 6.

108. *See* Bremer, *supra* note 2, at 153–83.

Conference of the United States recommended this approach, urging federal agencies to work with copyright owners and use available technological solutions, such as read-only access, to expand access to incorporated materials.[109] Others have argued that free online access should be required in all cases, regardless of other considerations. Some have sought to achieve this by asking OFR to amend its regulations to interpret FOIA's "reasonably available" standard more stringently.[110] OFR declined this invitation in its recently published final rule revising its incorporation by reference regulations.[111] Others have sought to force free online access through copyright litigation or have argued that such access should be mandated by statute or required by agencies as a condition of incorporation.[112]

In one limited regulatory context, Congress has imposed an uncompromising free access mandate for incorporated standards. This mandate affects PHMSA, the component agency of the Department of Transportation responsible for regulating pipelines and hazardous materials transportation.[113] Institutionally, the agency operates through two offices or "sides": one that focuses on regulating hazardous materials and another that focuses on pipeline safety.[114] In Section 24 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011,[115] enacted on January 3, 2012, Congress prohibited the pipeline side of PHMSA from incorporating by reference, into regulations or guidance, any material not available to the public for free online. The language of the provision was uncompromising:

> Beginning 1 year after the date of enactment of this subsection, the Secretary [of Transportation] may not issue guidance or a regulation pursuant to this chapter that incorporates by reference any documents or portions thereof unless the documents or portions thereof are made available to the public, free of charge, on an Internet Web site.[116]

PHMSA reasonably interpreted this provision to have prospective effect only. At the time the statute was enacted, however, the agency

---

109. *See* RECOMMENDATION 2011-5, *supra* note 3, at 2, 258.

110. *See* Incorporation by Reference, 77 Fed. Reg. 11,414, 11,414–16 (Feb. 27, 2012).

111. *See* Incorporation by Reference, 79 Fed. Reg. 66,267, 66,269–71 (Nov. 7, 2014).

112. *See, e.g.*, Mendelson, *supra* note 5.

113. *See* 49 U.S.C. § 108(a)–(b) (2012).

114. *See* PHMSA ORGANIZATION, http://www.phmsa.dot.gov/about/org (last visited Dec. 20, 2014).

115. *See* Pipeline Safety Act, *supra* note 9.

116. 49 U.S.C. § 60102(p) (2012). As explained below, the statute has since been amended in certain key respects. *See infra* notes 118–121 and accompanying text.

was already in the midst of rulemaking proceedings to update its standards incorporated by reference. Section 24 required the agency to put the proceedings on hold, while it spent approximately a year and a half working out how to implement the law's requirements. These efforts included a July 2012 public workshop on implementation,[117] as well as extensive negotiations with standards developers.

In August 2013, in response to significant concerns that Section 24 was unworkable, Congress amended the law, softening its requirements in three respects.[118] First, Congress extended the effective date of the law, giving PHMSA until January 2015 to complete implementation.[119] Second, as amended, Section 24 will no longer apply to incorporations by reference in guidance, just regulations.[120] Finally, and most crucially, Congress eliminated the requirement that free access to incorporated standards be provided "on an Internet Web site."[121]

Nonetheless, PHMSA's experience with Section 24 provides a unique opportunity to comprehensively evaluate, in a defined regulatory context, the costs of incorporated standards and the viability of an uncompromising mandate for free online access to incorporated standards. Those who view such a mandate as the best or only acceptable solution frequently appear to work from the premise that the primary purpose of private standards is regulatory, that standards developers view incorporation by reference as a valuable prize, and that federal agencies could easily achieve regulatory goals without integrating private standards into regulations. They have also argued that standards developers charge "significant fees" for access to incorporated standards and engage in monopoly pricing of incorporated standards, offering only discrete examples as evidence that these pricing practices are the norm.[122] The Section 24 experiment provides a defined context in which to comprehensively evaluate the validity of these claims and assess the consequences of requiring free online access as a condition of regulatory incorporation by reference.

---

117. *See* Pipeline Safety: Notice of Public Workshop To Discuss Implementing Incorporation by Reference Requirements of Section 24 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, 77 Fed. Reg. 37,472 (June 21, 2012).

118. *See* Availability of Pipeline Safety Regulatory Documents, Pub. L. No. 113-30, 127 Stat. 510 (2013).

119. *Id.*

120. *Id.*

121. *Id.* The implications of these amendments are explored further in Part IV.

122. *See, e.g.*, Strauss, *supra* note 5.

III. THE IMPERATIVE OF PUBLIC-PRIVATE COLLABORATION

Understanding PHMSA's experience with Section 24, and crafting a workable solution to incorporation by reference's public access problem, first requires a nuanced understanding of the vast and complex, but frequently overlooked, world of private standards. As an initial matter, the terms "standard" and "technical standard" are often used interchangeably,[123] and are defined for purposes of federal standards policy as:

> (1) Common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices.
>
> (2) The definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength.[124]

As this definition suggests, standards take many different forms and serve a variety of purposes.[125] Although frequently invisible to the average consumer, standards are crucially important for manufacturing, industry, commerce and trade, public safety, and technological progress.

In most nations, standards development is a government-driven enterprise, even if nominally carried out by private standards development organizations. In contrast, the United States has a highly decentralized, market-driven, predominately private standards system that has evolved over more than a century. Viewed in this context, the federal standards policy embodied in the Tech Transfer Act and Circular A-119 is best understood as merely the most recent and prominent extension of a larger and more deeply rooted commitment to private standards development. One consequence is that, in the United States,

---

123. *See* CIRCULAR A-119, *supra* note 1, at ¶ 3.

124. *Id.* at ¶ 3(a).

125. At the broadest level, standards can be divided into physical measurement standards and documentary standards. Physical measurement standards establish "basic measurement quantities" and "are traceable to the International System of Units (SI)." MAUREEN A. BREITENBERG, NISTIR 7614, THE ABC'S OF STANDARDS ACTIVITIES 4, *available at* http://gsi.nist.gov/global/docs/pubs/NISTIR_7614.pdf. This article is primarily concerned with documentary standards, which NIST has described, consistent with Circular A-119's definition, as "written agreements containing technical specifications or other precise criteria that may contain rules, guidelines, or definitions of characteristics." *Id.* at 5.

private standards significantly outnumber public standards—and even without governmental action, the accepted national standard is often a private standard. The federal government generally lacks the resources, technical expertise, and knowledge to displace private standards.[126] As a practical matter, then, agencies must be able to incorporate private standards into public law in order to craft effective regulations and smoothly integrate coexisting governmental and private regulatory regimes.

A. The Importance of Standards

Over the course of thirty hours in early February 1904, most of the city of Baltimore, Maryland burned to the ground.[127] The fire apparently began on a Sunday morning, February 7, when a cigarette or cigar was tossed to the ground and found its way through a crack in the sidewalk and into the basement of the John E. Hurst dry-goods company,[128] located in the western part of downtown Baltimore.[129] The fire quickly spread beyond the capacity of Baltimore's firefighters to contain it, and pleas for help were telegraphed to surrounding cities and counties. By early afternoon, the first engine companies arrived by train from Washington, D.C. They were little help: their hoses could not fit Baltimore's hydrants because of differences in the threads and couplings. Other fire companies arrived from all over the Mid-Atlantic—from Altoona, Annapolis, Chester, Harrisburg, New York, Philadelphia, Wilmington, and York—but many were similarly unable to join the fight because their hoses would not fit Baltimore's fire hydrants.[130] In the end,

---

126. This is likely true of the federal government as a whole, even if its power and expertise were not divided among numerous federal agencies. It also bears noting that, although only a tiny fraction of private standards are incorporated into federal law, eliminating incorporation might require the federal government to take over the entire standards system.

127. *See generally* PETER B. PETERSEN, THE GREAT BALTIMORE FIRE (2005) (describing how a fire on Sunday, February 7, 1904, caused the burning of Baltimore's waterfront and business district).

128. *See* Brennen Jensen, *Lives Lost: One*, BALTIMORE CITY PAPER, Sept. 3, 2003, http://www2.citypaper.com/news/story.asp?id=2321.

129. *See* PETERSEN, *supra* note 127; MOMAR D. SECK & DAVID D. EVANS, MAJOR U.S. CITIES USING NATIONAL STANDARD FIRE HYDRANTS, ONE CENTURY AFTER THE GREAT BALTIMORE FIRE 7 (Nat'l Inst. of Standards & Tech. 2004), *available at* http://www.fire.nist.gov/bfrlpubs/fire04/PDF/f04095.pdf.

130. *See* BREITENBERG, *supra* note 125, at 3; *see also* Tyler R.T. Wolf, *Existing in a Legal Limbo: The Precarious Legal Position of Standards-Development Organizations*, 65 WASH. & LEE L. REV. 807, 808 (2008) (discussing the historic Baltimore fire and the futile attempts by crews from other cities to help).

although only one life was lost, the fire consumed seventy city blocks, and destroyed more than 1,500 buildings and 2,500 businesses.[131]

Widespread equipment incompatibilities allowed the Great Baltimore Fire to spread further and burn longer, greatly exacerbating the resulting damage and making painfully apparent the need for standardized specifications for fire hydrant and hose couplings. Indeed, as a National Bureau of Standards study found later that same year,[132] there were approximately "600 sizes and variations in fire-hose couplings across the country."[133] Fire hose manufacturers routinely patented their own unique designs, clinging to them for competitive advantage, rendering one community's equipment incompatible with that used in other, even neighboring, communities.[134] In 1905, a committee of NFPA, a private standards development organization, responded by producing the first edition of the standard that to this day defines the diameter and threading specifications for fire hydrants and hose couplings.[135] Nearly a quarter century later, Fall River, Massachusetts escaped the extensive destruction Baltimore had suffered because standardized fire hydrants and hose couplings enabled fire fighters from twenty neighboring communities to come swiftly to the town's rescue.[136]

Around the turn of the twentieth century, often in response to the unique challenges and tragedies that came with the Industrial Revolution,[137] a variety of private sector organizations, including standards development organizations, professional societies, and trade associations, emerged to develop standards designed to reduce public hazards, ensure the quality of materials and equipment, promote technological progress, and facilitate trade.[138] These private standards,

131. *See* SECK & EVANS, *supra* note 129, at 7–8.

132. The National Bureau of Standards is known today as the National Institute of Standards and Technology [hereinafter NIST]. *See* 15 U.S.C. § 271(b)(1) (2012).

133. SECK & EVANS, *supra* note 129, at 8.

134. *See id.* at 7, 9.

135. *See id.* at 9. Continued non-conformity in some locations has caused urban fire disasters, and NIST has found a surprising number of jurisdictions that still do not use national standard fire hydrants and hoses. *See id.* at 11–14.

136. *See* BREITENBERG, *supra* note 125, at 3–4.

137. The first industrial era standards took the form of specifications included in private purchase contracts to establish the required quality or performance characteristics of the materials conveyed. Standardization was necessary to ensure consistency—for example, railroads needed confidence that steel purchased from various suppliers was strong enough to build safe rails—but the contract-based approach was inefficient and incapable of encouraging high levels of conformity across the national market. *See* ASTM INT'L, ASTM 1898-1998: A CENTURY OF PROGRESS 29–30 (1998), http://www.astm.org/IMAGES03/Century_of_Progress.pdf [hereinafter CENTURY OF PROGRESS].

138. *See generally id.* (explaining the development of the ASTM standards).

although technically advisory or voluntary in nature,[139] made many great feats possible. For example, ASTM standards for structural carbon and silicon steel, steel castings, cement, concrete, and paving blocks made possible the construction of the Ambassador Bridge, which connects Detroit, Michigan with Windsor, Ontario.[140] It was the world's longest suspension bridge at the time of its completion in 1929, and it remains the busiest international border crossing in North America.[141] Similarly—and to give just a few examples—standardization enabled the construction of the nationwide rail system by ensuring the uniform quality and characteristics of steel rails, made steamboat transport safe by preventing once-common boiler explosions, and facilitated the development of nationally interoperable electrical systems and appliances.[142]

Although typically invisible to the average consumer, private standards are everywhere. They are essential for nearly every modern convenience, from consumer electronics to telephone and internet communications to automobile ignition systems.[143] The communications functions of the average smartphone alone require the use of more than 600 standards.[144] Standards produced by the Underwriters Laboratories (UL), a private, independent testing and certification organization created by insurers after electricity made its grand debut at the 1893 Chicago World's Fair, ensure the safety and interoperability of nearly every electrical appliance today sold in the United States.[145] Even more fundamentally, standards make it possible for technical professionals,

---

139. *See infra* notes 159-164 and accompanying text.

140. *See The History of ASTM International*, ASTM INT'L, http://www.astm.org/ABOUT/history_book.html (last visited Dec. 20, 2014).

141. *See* CENTURY OF PROGRESS, *supra* note 137, at 39; Monica Davey, *Bridge's Private Ownership Raises Concerns*, N.Y. TIMES, Oct. 12, 2007, http://www.nytimes.com/2007/10/12/us/12bridge.html?pagewanted=all.

142. AM. STANDARDS ASS'N, THROUGH HISTORY WITH STANDARDS: AN ILLUSTRATED TEXT BOOK FOR YOUNG AND OLD (1953), *reprinted in* SPEAKING OF STANDARDS 48, 50, 64 (Rowen Glie ed., 1972).

143. *See, e.g.*, Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1896–98 (2002).

144. Dr. George Arnold, Director, Standards Coordination Office, NIST, Remarks at NIST Fundamentals of Standards for Government Agencies Workshop: Overview of NIST and the Standards Coordination Office (May 9, 2013).

145. *See, e.g.*, *How Underwriters Laboratories has Progressed*, CHI. TRIB., June 29, 2011, http://articles.chicagotribune.com/2011-06-29/business/ct-biz-0630-bf-underwriters-timeline-20110629_1_electrical-engineer-william-henry-merrill-electrical-safety. Pick up the lamp or other electrical appliance closest to you at this moment, and you will surely see the organization's distinctive mark, "UL®," in a circle, on its base or cord tag. *See generally* CHEIT, *supra* note 100, at 94–106 (exploring UL's history, importance, and standards development process through a case study of UL 1482, Solid-Fuel Type Room Heaters).

manufacturers, government employees, and others to communicate and collaborate with one another.[146] To that end, many standards facilitate mutual understanding simply by defining methods or materials, often at a very basic level. For example, there is a standard that defines "two-by-four," a common piece of lumber that is not, in fact, two feet by four feet in dimension.[147] There are even meta-standards that establish the uniform vocabulary necessary for standards professionals around the world to understand and collaborate with each other.[148]

B. The Predominately Private U.S. Standards System

A key point is implicit in the above discussion: the U.S. standards system is predominately private, highly decentralized, and market-driven.[149] This system has evolved over the course of more than a century, but its fundamental characteristics are no accident. To the contrary, there have been a number of pivotal moments in the system's evolution when the United States has consciously sought to address pressing public standardization needs by encouraging and shaping private standards development and cultivating a robust private-public partnership in standards.

The federal government has understood the importance of standardization for the advancement of science, industry, manufacturing, and commerce from the time of the founding.[150] This is reflected in the Constitution, which grants Congress the power to "fix the Standard of Weights and Measures."[151] For more than a century following the

---

146. *See, e.g.*, Donald R. Mackay, *The Development and Use of National Voluntary Standards*, 24 FOOD DRUG COSM. L.J. 550, 555 (1969).

147. *See* CHEIT, *supra* note 100, at 5 n.9. There is even a standard for snowboarding terminology. *See Standard Terminology Relating to Snowboarding,* ASTM F1107-04, ASTM INT'L (2010), http://www.astm.org/Standards/F1107.htm.

148. *See ISO/IEC Guide 2:2004, Standardization and related activities—General Vocabulary*, ISO, http:// www.iso.org/iso/catalogue_detail?csnumber=39976 (last visited Dec. 20, 2014).

149. In most other nations, the standards development community is smaller and less diverse than it is in the U.S., and most standards development is government-driven, even if it is carried out by nongovernment organizations. *See, e.g.*, TIM BÜTHE & WALTER MATTLI, THE NEW GLOBAL RULERS: THE PRIVATIZATION OF REGULATION IN THE WORLD ECONOMY 17 (2011). Most nations have long had national standards laboratories or similar government or quasi-government organizations clothed with authority to establish national standards. *See, e.g.*, REXMOND C. COCHRANE, MEASURES FOR PROGRESS: A HISTORY OF THE NATIONAL BUREAU OF STANDARDS 15 (1966).

150. *E.g.*, COCHRANE, *supra* note 149, at 16.

151. U.S. CONST. art. I, § 8, cl. 5, 8 (granting Congress the power to "promote the Progress of Science and useful Arts" through patent and copyright). The constitutional reference is to measurement standards, not documentary standards. *See* BREITENBERG, *supra* note 125 and accompanying text. Congress's standards power today is exercised through NIST. *See* 15 U.S.C. §

founding, however, opposition to centralized federal power largely prevented the establishment of the federal scientific institutions necessary to exercise the power effectively and drove opposition to the appropriation of federal funds to support private scientific research.[152] Responsibility for standardization was left to the states, which lacked the resources and authority to do the job.[153] The resulting standards vacuum caused myriad problems. At one point, there were at least eight different "authoritative" standards governing the measure of a U.S. gallon.[154] This kind of standards proliferation impeded both government operations, such as the collection of customs duties and property taxes, and private enterprise, including commerce and scientific progress.[155] In the absence of a properly equipped national standards laboratory, the highly precise instruments required for reliable measurement typically had to be procured from national laboratories in Europe and were usually in short supply.[156] More troubling, without a functioning standards system, the quality of construction materials, industrial goods, and household products became increasingly unreliable, and the public health and safety were frequently and unnecessarily imperiled. By the turn of the twentieth century, Congress could no longer deny that federal government involvement in standardization was necessary.

Even when the federal government became an active participant in the development of standards, it consistently did so in a collaborative way that sought to complement and improve, rather than displace, private standards development. For example, in 1901, Congress finally created a national laboratory, the National Bureau of Standards (now known as NIST),[157] but purposively declined to cast it in the European mold of government-driven standardization.[158] As the private standards development community began to emerge and grow, federal government employees participated in the standards development process alongside

---

272(b)(2) (2012). NIST establishes and maintains uniform national standards for weights and measures and even keeps the United States' official time. *See Time and Frequency Division*, NIST, http://www.nist.gov/pml/div688/ (last visited Dec. 20, 2014).

152. *See* COCHRANE, *supra* note 149, at 16–20.

153. *See id.* at 36.

154. *See id.* at 33–34.

155. *See id.*

156. *See id.* at 37–38.

157. *See* 15 U.S.C. § 271(b)(1) (2012). NIST is a component agency of the Department of Commerce. *See* 15 U.S.C. § 1511(3).

158. *See, e.g.*, CENTURY OF PROGRESS, *supra* note 137, at 32.

privately employed technical experts.[159] During World War I, the federal government worked closely with the private sector to meet the war's significant standardization needs.[160] This included the creation of the American Engineering Standards Committee in 1918, a joint venture of private sector standards organizations and federal government departments to streamline and coordinate the process of developing the many voluntary standards essential to the war effort.[161] That committee eventually became the American National Standards Institute (ANSI), a private organization that today continues to coordinate the U.S. standards system in partnership with federal government officials.[162]

It bears emphasizing that public-private collaboration is a two-way street: just as government policy has been shaped by the dominance of private standards, so too has the private standards community been shaped by governmental needs and public values. The emergence and evolution of the voluntary consensus standards development process is a prime example. One impetus for the expansion of federal health and safety regulation in the 1960s and 1970s was widespread dissatisfaction with private standards and the often closed, opaque nature of the process through which they were developed.[163] The private standards development community responded by reforming the process into what is today known as the voluntary consensus process. This process is marked by the inclusion of participants with a wide range of views, transparency, due process, appeals, and the promise that any resulting standard reflects a true consensus among all participants.[164] These principles are described in Circular A-119 and are perhaps best reflected in the ANSI's Essential Requirements.[165] It was after the voluntary consensus process had sufficiently evolved and was regularly used that the federal government began to favor the use of voluntary consensus standards in health and safety regulation. Understood in light of this history, the incorporation by reference debate appears to be merely the

159. *See id.* at 33.

160. *See* Mackay, *supra* note 146, at 551; *see also* CENTURY OF PROGRESS, *supra* note 137, at 34–35 (noting the private sector's collaboration with the government to support wartime standards setting).

161. *See, e.g.*, CENTURY OF PROGRESS, *supra* note 137, at 35.

162. *See National Policy Committee*, AM. NAT'L STANDARDS INST., http://www.ansi.org/standards_activities/domestic_programs/governance_committees/about_nic.aspx#.UcIUXPmyDnE (last visited Dec. 20, 2014).

163. *See* Bremer, *supra* note 2, at 140–41; Hamilton, *supra* note 99, at 1379–86.

164. *See, e.g.*, CIRCULAR A-119, *supra* note 1, at ¶ 4.

165. *See* AM. NAT'L STANDARDS INST., ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS (Jan. 2013) [hereinafter ESSENTIAL REQUIREMENTS].

most recent flare-up of fundamental and longstanding tensions that arise at the intersection of private standards and public law.

C. The Need to Integrate Private Standards and Public Law

One consequence of the predominantly private character of the U.S. standards system is that public standards are—and long have been—significantly outnumbered by private standards.[166] A recent study suggests that there are at most 114 federal agencies,[167] while as of 2004, there were more than 600 standards development organizations in the United States.[168] There is significant diversity among these private organizations, although the most common are trade associations, professional societies, standards organizations, international organizations, and consortia.[169] It is estimated that there are currently more than 100,000 private standards actively in use in the United States.[170] In any given sector, such as consumer products or pipeline transportation, the output of the private standards developers typically far outstrips that of the relevant public counterpart. Thus, in 1990, one scholar noted that while the Consumer Product Safety Commission (CPSC) had created about a dozen standards since its creation in 1973 (several of which had been challenged in court), UL had over five hundred published standards.[171] A similar phenomenon is observable in the modern pipeline context. Although approximately 73% of PHMSA's

166. *See* CHEIT, *supra* note 100, at 5–6. Particularly in political science and legal scholarship, this reality is generally obscured by the disproportionate attention given to public standards and the public processes through which they are developed.

167. *See* DAVID E. LEWIS & JENNIFER L. SELIN, SOURCEBOOK OF UNITED STATES EXECUTIVE AGENCIES A1–A4 (Admin. Conf. of the U.S., Dec. 2012), *available at* http://www.acus.gov/sites/default/files/documents/Sourcebook%202012%20FINAL_May%202013.pdf. This study is a comprehensive evaluation of the federal executive establishment, and thus many of the agencies are non-regulatory entities that would not establish standards. On the other hand, the definition of "agency" used in the study does not independently count component agencies. Thus, for example, PHMSA is not independently counted among the 114 because it is a component agency of the Department of Transportation.

168. U.S. DEP'T OF COMMERCE, STANDARDS & COMPETITIVENESS: COORDINATING FOR RESULTS 5 (May 2004), http://ita.doc.gov/td/standards/pdf%20files/Standards%20and%20Competitiveness.pdf.

169. *See, e.g.*, 16 C.F.R. § 1031.1(b) (2014) ("[V]oluntary standards bodies are private sector domestic or multinational organizations or groups, or combinations thereof, such as, but not limited to, all non-profit organizations, industry associations, professional and technical societies, institutes, and test laboratories, that are involved in the planning, development, establishment, revision, review or coordination of voluntary standards.").

170. E-mail from Scott P. Cooper, Vice President of Gov't Relations, Am. Nat'l Standards Inst., to author (June 11, 2013) (on file with author).

171. CHEIT, *supra* note 100, at 6.

incorporated standards are developed by just three organizations,[172] those incorporated standards represent just 3.7%,[173] one-tenth of 1%,[174] and 2%,[175] of those organizations' respective standards portfolios. This imbalance pervades the U.S. standards system—the thousands of private standards incorporated by reference into federal regulations represent just a tiny fraction of private standards actively in use in the United States.[176]

On one level, agencies use private standards in regulations instead of creating their own standards because federal law requires it.[177] The requirement to use available voluntary consensus standards applies government-wide through the Tech Transfer Act and Circular A-119, and the policy is echoed in myriad, narrower contexts through executive directives[178] and statutory provisions that require individual agencies to use private standards, participate in private standards development, and otherwise collaborate with the private sector on standards issues.[179] Agency personnel frequently participate in private standards development,[180] an activity that federal law encourages and supports.[181] One of NIST's core functions is to "coordinate the use by Federal agencies of private sector standards, emphasizing where possible the use

172. *See infra* notes 187 and accompanying text.

173. *See infra* note 199 and accompanying text.

174. *See infra* note 207 and accompanying text.

175. *See infra* note 213 and accompanying text.

176. *See infra* Part IV.B.

177. *See supra* Part II.C.

178. *See, e.g.*, Improving Energy Security, American Competitiveness and Job Creation, and Environmental Protection Through a Transformation of Our Nation's Fleet of Cars and Trucks, 75 Fed. Reg. 29,399 (May 21, 2010) (directing "[t]he Department of Energy [to] work with stakeholders on the development of voluntary standards to facilitate the robust deployment of advanced vehicle technologies and coordinate its efforts with the Department of Transportation, the NHTSA, and the EPA").

179. *See, e.g.*, 6 U.S.C. § 747 (2012) (requiring the Federal Emergency Management Agency (FEMA) to support and consult with private sector voluntary standards developers in creating uniform equipment and training standards for emergency response providers); 15 U.S.C. §§ 1193(g)–(h), 1262(f)–(h), 2054(a)(4) (2012) (requiring CPSC to collaborate with private sector standards developers in service of its mission of ensuring the safety of consumer products); 42 U.S.C. § 16194 (2012) (directing the Department of Energy to collaborate with the private sector to assess and improve existing voluntary consensus standards and rating systems for high performance buildings).

180. *See, e.g.*, CIRCULAR A-119, *supra* note 1; Hamilton, *supra* note 99; *see also* 16 C.F.R. pt. 1031 (2012) (CPSC's regulations regarding agency employee participation in voluntary standards activities).

181. *See* NTTAA, *supra* note 1, at § 12; CIRCULAR A-119, *supra* note 1, at ¶ 7. Congress provided further support for federal participation in private standard-setting activities in Section 1115 of the National Defense Authorization Act for Fiscal Year 2002, Pub. L. No. 107-107, § 1115 (codified as amended at 5 U.S.C. § 5946 (2013)) (exempting standards development activities from a statutory limitation on agencies using general appropriations to pay for employees' membership fees or attendance at conferences or meetings of societies or associations).

of standards developed by private, consensus organizations."[182] Even PHMSA's statute expressly contemplates the use of private standards in federal pipeline safety regulations.[183]

The imperative to integrate private standards into public law is not, however, merely a matter of statutory requirement, executive policy, or political preference. It is a matter of real and practical necessity. Public policy and regulation, not engineering and design, are the domain of federal agencies. Agency officials, particularly those responsible for formulating policy and writing rules, are often lawyers or political appointees who lack the expertise required to develop sound technical specifications. Similarly, the expense of developing standards is beyond the budgetary capacity of most agencies. The APA and other administrative law requirements further important public values, but make it impossible for agencies to act quickly enough to develop standards at the pace required to keep up with technological progress.

In addition, when a federal agency needs to include a technical standard in a regulation, it often discovers that a private standard is, for all intents and purposes, the de facto authoritative standard on the subject. Even when a standard has not been made formally mandatory via governmental adoption or incorporation by reference, that standard may acquire coercive effect by virtue of one or more other forces. Participating in a given industry or technical field often requires intimate knowledge and consistent use of terminology and technical concepts authoritatively defined by private standards. Similarly, success in the marketplace often requires conformity with private standards to facilitate interoperability with parts or accessories manufactured by various other producers, or to satisfy market and consumer demands for reliable assurances of safety, quality, or fitness for purpose.[184] Contracts may require conformity to private standards as a way of precisely establishing the parties' expectations regarding, for example, the quality or characteristics of goods being procured or insured.[185] Tort law may look

182. 15 U.S.C. § 272(b)(3) (2012).

183. *See, e.g.*, 49 U.S.C. § 60102(l) (2012) ("The Secretary shall, to the extent appropriate and practicable, update incorporated industry standards that have been adopted as part of the Federal pipeline safety regulatory program under this chapter.").

184. *E.g.*, Am. Soc'y of Mech. Eng'rs, Inc. v. Hydrolevel Corp., 456 U.S. 556, 559 (1982) ("Obviously, if a manufacturer's product cannot satisfy the applicable ASME code, it is at a great disadvantage in the marketplace.").

185. If such contract terms may become common practice within an industry, individual parties may have little real choice but to agree to conform to particular, widely-accepted private standards. Government procurement, which is generally beyond the scope of this article, is just one context in which contractual arrangements may contribute to the de facto authoritativeness of private standards. *See generally* George W. Ritter, *Standards and the Federal Consumer*, *in* SPEAKING OF STANDARDS

to private standards to define the duty of care, putting some force behind those standards without giving them formal legal effect.

Finally, standardization is most effective when it is well coordinated, with any overlap or inconsistencies among different standards minimized or eliminated.[186] The reality is that there is a vast world of private standards that exists independently of federal regulation. For regulation in any particular industry to be efficient and effective, it must complement and not conflict with the private regulatory regime already in place. Incorporation by reference is essential to achieving this goal, facilitating the smooth integration of private standards and public law.

IV. PIPELINE SAFETY: A CASE STUDY IN INCORPORATION BY REFERENCE

A. Meet the Standards Development Organizations

The group of organizations that develop PHMSA's standards is representative of the highly diverse composition of the U.S. standards development community. Although PHMSA's pipeline regulations incorporate standards produced by eleven organizations, 73% (forty-seven of sixty-four) of those standards are created by just three organizations—the American Petroleum Institute (API), ASTM International (ASTM),[187] and ASME International (ASME).[188] These organizations are a trade association, an international standards

---

230, 230–34 (Rowen Glie ed., 1972).

186. Thus, for example, in the context of defense procurement, Congress has mandated that the Secretary of Defense "to the highest degree practicable . . . eliminat[e] overlapping and duplicate specifications, and reduc[e] the number of sizes and kinds of items that are generally similar." 10 U.S.C. § 2451 (2012); *see also* 6 U.S.C. § 747 (2012) (requiring FEMA to support development of voluntary consensus standards for equipment and training that must, "to the maximum extent practicable, be consistent with existing national voluntary consensus standards"); *cf.* 15 U.S.C. § 2051(b)(3) (2012) (declaring that one purpose of the Consumer Product Safety Act is "to develop *uniform* safety standards for consumer products and to *minimize conflicting* State and local regulations" (emphasis added)).

187. "ASTM" is derived from ASTM International's original name, the American Society for Testing and Materials. The organization changed its name in 2001 to reflect the increasingly global influence of its standards. *See* Press Release, ASTM International, Name Change Reflects Global Scope (Dec. 11, 2001), http://www.astm.org/HISTORY/astm_changes_name.pdf; *see also* Hamilton, *supra* note 99, at 1338. Using just an acronym as the organizational name, without retaining the name from which the acronym was originally derived, appears to be something of a trend among standards development organizations.

188. "ASME" is derived from ASME International's original name, the American Society of Mechanical Engineers. *See* William J. Curran III, *Volunteers . . . Not Profiteers: The Hydrolevel Myth*, 33 CATH. U. L. REV. 147, 148 (1983); Hamilton, *supra* note 99, at 1340.

organization, and a professional society, respectively.[189] The remaining 27% of PHMSA's standards (seventeen of sixty-four) are produced by eight other standards development organizations. This diverse group includes three trade associations (the American Gas Association (AGA), Pipeline Research Council International (PRCI), and Plastics Pipe Institute, Inc. (PPI)), two professional societies (the American Society of Civil Engineers (ASCE) and NACE International[190]), one international standards organization (NFPA), one research organization (the Gas Technology Institute (GTI)[191]), and one technical association (the Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS)). An examination of the nature, history, and activities of the three largest organizations will make concrete the previous overview of the standards system.[192]

API is PHMSA's largest standards contributor, producing one-third (twenty-two of sixty-four, or 34%) of the standards PHMSA incorporates by reference.[193] Founded in 1919 as one part of the private-public standardization effort required to fight World War I,[194] API is the national trade association for the oil and natural gas industry.[195] Although membership is restricted to businesses operating within the industry, API includes non-industry representatives, such as consumer

189. *See About API*, API, http://www.api.org/aboutapi/ (last visited Dec. 20, 2014) ("The American Petroleum Institute (API) is the only national trade association . . . ."); *Frequently Asked Questions*, API, http://www.astm.org/ABOUT/faqs.html (last visited Dec. 20, 2014) ("ASTM International is one of the largest voluntary standards developing organizations in the world."); *About ASME*, ASME, https://www.asme.org/about-asme?cm_re=Standards%20and%20Certification-_-GlobalHeader-_-About%20Us (last visited Dec. 20, 2014) (ASME is a membership organization with more than 140,000 members in 151 countries with a goal of "helping the global engineering community develop solutions to benefit lives and livelihoods.").

190. NACE International, the Corrosion Society, was originally known as the National Association of Corrosion Engineers. *See About Nace International*, NACE INT'L http://www.nace.org/About-NACE/ (last visited Dec. 20, 2014).

191. GTI was formerly known as the Gas Research Institute (GRI), a history reflected in some of its standards' titles. *See GTI History*, GTI GAS TECH. INST., http://www.gastechnology.org/About/Pages/History.aspx (last visited Dec. 20, 2014).

192. *See supra* Part II.B.

193. *See infra* Table 2 (identifying all contributors to PHMSA standards and the number of standards incorporated from each).

194. *See supra* note 154 and accompanying text.

195. API's more than 500 corporate members range from major oil companies to small, independent businesses, and represent all segments of the industry, including producers, refiners, suppliers, pipeline operators, marine transporters, and servicers. *See API Overview and Mission*, API, http://www.api.org/globalitems/globalheaderpages/about-api/api-overview (last visited Dec. 20, 2014). The organization's activities include industry advocacy, public outreach and education, research, statistics compilation and reporting, equipment and inspector certification, and standards development. *Id.*

advocates and academics, in its standards development activities.[196] Indeed, its standards program, established in 1924, is accredited by ANSI.[197] The organization maintains more than 600 standards and recommended practices and is the largest developer of petroleum and petrochemical equipment and operating standards in the nation.[198] Its work is thus squarely within the subject matter of PHMSA's regulatory mandate. Even so, the twenty-two API standards referenced in federal pipeline regulations represent just a tiny fraction[199]—approximately 3.7%—of API's total standards portfolio.[200]

PHMSA's second largest standards developer, ASTM, produces approximately one-fifth (fourteen of sixty-four, or 22%) of PHMSA's standards.[201] ASTM is a true standards development organization, created in 1898 by a chemist working for the Pennsylvania Railroad who perceived the need for uniform standards to assure the quality of industrial materials the railroad purchased in bulk quantities from a variety of different suppliers.[202] From its founding, principles of consensus, inclusiveness, and due process appear to have been at the core of ASTM's institutional philosophy.[203] Today, more than 32,000 volunteers participate in the standards development work of ASTM's 162 technical committees.[204] With more than 12,000 active standards, ASTM is the largest standards developer in the United States,[205] and the

196. As an ANSI accredited standards developer, *see infra* note 197 and accompanying text, it is required to observe the essential requirement of balanced representation on technical committees. *See* ESSENTIAL REQUIREMENTS, *supra* note 165, at 4, 5–6.

197. *See* Press Release, *ANSI reaccredits API's standards program*, API (Oct. 6, 2011), http://www.api.org/news-and-media/news/newsitems/2011/oct-2011/ansi-reaccredits-apis-standards-program.

198. *See Publications, Standards and Statistics Overview*, API, http://www.api.org/publications-standards-and-statistics.aspx (last visited Dec. 20, 2014).

199. *See infra* Table 2 (outlining the number of standards incorporated into PHMSA standards from each contributor).

200. *See Publications, Standards and Statistics Overview*, *supra* note 198.

201. *See infra* Table 2 (identifying all contributors to PHMSA standards and the number of standards incorporated from each).

202. *See The History of ASTM International*, ASTM INT'L, http://www.astm.org/ABOUT/history_book.html (last visited Dec. 20, 2014).

203. *See* CENTURY OF PROGRESS, *supra* note 137, at 30–31.

204. *See Technical Committees*, ASTM INT'L, http://www.astm.org/COMMIT/ (last visited Dec. 20, 2014). Any interested individual can become a participating member of an ASTM technical committee for a fee of $75.00 per year. *See Membership*, ASTM INT'L, http://www.astm.org/MEMBERSHIP/MemTypes.htm (last visited Dec. 20, 2014). Membership includes direct participation in the committee's work and free copies of the committee's standards, as well as other benefits. *Id.*

205. *See About ASTM International*, ASTM INT'L, http://www.astm.org/ABOUT/overview.html (last visited Dec. 20, 2014).

organization most frequently referenced in federal regulations—there are more than 2,000 references to ASTM standards in the CFR.[206] The fourteen ASTM standards incorporated into PHMSA's pipeline regulations are a negligible portion—approximately one-tenth of one percent—of the organization's overall standards portfolio.[207]

In third place is ASME, which is responsible for just under one-fifth (eleven of sixty-four, or approximately 17%) of PHMSA's incorporated standards.[208] A professional society for engineers established in the United States in 1880, ASME's influence is increasingly international—the society has more than 130,000 members from 158 different countries.[209] Developing codes and standards is a significant component of ASME's work—more than 5,000 volunteers participate in the work of its 700 technical committees.[210] ASME is perhaps best known for its Boiler and Pressure Vessel Code, which has applications in many different industries.[211] Indeed, with a broad focus on engineering, ASME standards are used in a variety of industries, including aerospace and defense, automotive, bioengineering, construction and building, energy, environmental engineering, manufacturing and processing, and transportation. As with API and ASTM, the 11 standards incorporated into federal pipeline safety regulations[212] represent a very small share—approximately 2%—of ASME's 530 standards and codes.[213]

As this discussion reveals, some of PHMSA's standards developers work particularly on pipelines and the petroleum industry (e.g., API, AGA, GTI), while others have broader missions and produce only a few materials that have discrete implications for the industry PHMSA regulates (e.g., ASTM, ASME, NFPA). As a consequence, the agency

206. *See* Bremer, *supra* note 2, at 150.

207. *See About ASTM International*, *supra* note 205.

208. *See infra* Table 2 (outlining the number of standards incorporated into PHMSA standards from each contributor).

209. *See ASME by the Numbers*, ASME, https://www.asme.org/wwwasmeorg/media/ResourceFiles/AboutASME/ASME-By-TheNumbers_fact-sheet.pdf (last visited Dec. 20, 2014).

210. *See id.* As a professional society, ASME also provides training and professional development services, conducts research, organizes conferences, and represents its members' interests through government relations activities and public outreach. *See id.*

211. *See infra* note 274 and accompanying text.

212. *See infra* Table 2 (outlining the number of standards incorporated into PHMSA standards from each contributor).

213. *See ASME by the Numbers*, *supra* note 209. This phenomenon is observable with respect to some of PHMSA's more minor standards development organizations, too. For example, PHMSA's pipeline regulations incorporate by reference 5 standards and codes developed by the NFPA, *see infra* Table 2, which is just 2.7% of the organization's 185 codes and standards.

has better working relationships—and more leverage—with some standards developers than it does with others.

The materials incorporated by reference into PHMSA's pipeline regulations are as diverse as the organizations that develop them. Many of these materials are technical standards, such as ASTM's *Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service*[214] and MSS's *Specification for High Test Wrought Butt Welding Fittings*,[215] or codes, such as NFPA's *National Electrical Code*.[216] Others identify recommended practices, such as API's *Recommended Practice 2510, Design and Construction of LPG Installations*,[217] or provide safety guidelines, as does AGA's *Purging Principles and Practice*.[218] The regulations also incorporate non-standards materials by reference, including two software programs produced by GTI,[219] and a technical report published by PRCI.[220]

B. A Comprehensive Analysis of the Costs of Incorporated Standards

To date, a comprehensive analysis of the actual cost to the public of purchasing private standards incorporated in federal regulations has not been possible. This is largely due to the practical difficulties associated with determining and comprehensively evaluating the thousands of private standards incorporated by reference in federal regulations. Not only is there no reliable, centralized list identifying these standards,[221] but pricing information is scattered among thousands of private standards

---

214. *See* 49 C.F.R. §§ 192.113, Item I, app. B to pt. 192, 195.106(e) (2014).

215. *See* 49 C.F.R. § 195.118(a).

216. *See* 49 C.F.R. §§ 192.163(e), 192.189(c). The current version is from 2014, with the next version due in 2017. *See* NAT'L FIRE PROTECTION ASS'N, http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=70 (last visited Dec. 20, 2014).

217. *See* 49 C.F.R. §§ 195.132(b)(3), 195.205(b)(3), 195.264(b)(2), 195.264(e)(4), 195.307(e), 195.428(c), 195.432(c) (2014). "LPG" refers to liquefied petroleum gas.

218. *See* 49 C.F.R. §§ 193.2513, 193.2517, 193.2615. "LNG" refers to liquefied natural gas.

219. *See* 49 C.F.R. § 193.2057(a) (incorporating GTI-04/0032, LNGFIRE3, A Thermal Radiation Model for LNG Fires); 49 C.F.R. § 193.2059 (incorporating GTI-04/0049, LNG Vapor Dispersion Prediction with the DEGADIS 2.1: Dense Gas Dispersion Model for LNG Vapor Dispersion).

220. *See* 49 C.F.R. §§ 192.485(c), 192.933(a)(1), 192.933(d)(1)(i), 195.452(h)(4)(i)(B), 195.452(h)(4)(iii)(D), 195.587 (incorporating *AGA Pipeline Research Committee, Project PR-3-805, A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe* (1989)).

221. NIST maintains a Standards Incorporated by Reference (SIBR) Database, but a close comparison of the CFR and the SIBR Database revealed pervasive errors and omissions in the latter's identification of standards incorporated into pipeline safety regulations, suggesting that the database may not be wholly complete or reliable. This is likely due to the fact that the database is compiled by hand, and the resources devoted to the project are insufficient to keep up with the pace of federal rulemaking.

developers and resellers. Advocates on both sides of the issue have thus relied on either a general sense of typical costs or discrete examples of the cost of individual incorporated standards. This has impoverished the debate and put government officials, including congressional staff and executive officials, in the difficult position of trying to formulate a government-wide policy without the benefit of comprehensive cost data.

This case study provides a unique opportunity to conduct a comprehensive analysis of the public availability of private standards incorporated by reference within a defined regulatory context.[222] PHMSA's regulations incorporate by reference a manageable number of easily identifiable materials: these include, as noted above, sixty-four standards and other materials developed by eleven organizations.[223] Only one of these incorporated standards appears to be out-of-print and unavailable for purchase.[224] The remaining sixty-three standards are available for online purchase from the standards developer or an authorized reseller.[225]

Although the aggregate cost to purchase copies of PHMSA's incorporated standards is considerable, the cost of the individual standards is highly variable, and the average and median prices of the standards do not appear to be excessive.[226] A complete set of PHMSA's incorporated standards costs $9,477.85.[227] At $630.00, ASME's *Rules for Construction of Pressure Vessels*, a single volume of ASME's multivolume *Boiler and Pressure Vessel Code*, is the most expensive standard.[228] The least expensive is PPI's *Policies and Procedures for Developing Hydrostatic Design Basis (HDB), Pressure Design Basis (PDB), Strength Design Basis (SDB), and Minimum Required Strength*

222. Membership in a standards development organization often includes free or discounted access to that organization's standards, but the incorporation by reference debate is primarily concerned with *public access*, that is, the cost to interested members of the general public seeking to obtain copies of privately authored, incorporated standards. Thus, this article analyzes the non-member costs of incorporated standards.

223. *See* 49 C.F.R. §§ 192.7, 193.2013, 195.3 (2014).

224. *See infra* note 264 and accompanying text.

225. In May 2013, using publicly available sources (primarily the standards developers' online catalogs), I compiled cost data for all of these standards, including the incorporated versions and any previous and/or subsequent versions. I did not discuss the project with any employee or representative of the relevant standards development organizations. In addition, because I was pulling the data from dynamic sources, I printed and retained dated, hard copies to compile a static record of the data. This source material and the Excel database I created to track the data are on file and available for inspection.

226. *See infra* Table 2.

227. *Id.*

228. *See* 49 C.F.R. §§ 192.153(a), 192.153(b), 192.153(d), 192.165(b)(3), 193.2321(a), 195.124, 195.307(e); *supra* note 216.

(MRS) Ratings for Thermoplastic Piping Materials or Pipe, which is available for free in PDF format on PPI's website.[229] Looking just to the maximum or minimum price, however, conveys an inaccurate impression of public access costs. The picture becomes clearer when one considers that the average cost of PHMSA's standards is $150.44, while the median cost is $112.00.[230] Table 1 provides an overview of these figures.

TABLE 1: OVERVIEW OF THE NON-MEMBER COST OF PHMSA'S INCORPORATED STANDARDS

Total Cost	Avg. Cost	Median Cost	Max Cost	Min. Cost
$9,477.85	$150.44	$112.00	$630.00	$0.00

In addition to being available for purchase, however, many of PHMSA's standards are also available for free online, usually in a read-only format. Four of PHMSA's standards development organizations—API, ASTM, NFPA, and PPI—have voluntarily provided free online access to all or some of their incorporated standards independently of PHMSA's efforts to implement Section 24.[231] PPI takes the simplest and least common approach, posting all of its materials online in PDF form, apparently as a matter of course and subject to no registration requirement or read-only restrictions.[232] For more than a decade, NFPA has provided free, read-only access to *all* of its codes and standards on its website.[233] API began providing free, read-only access to its incorporated standards in 2010, in response to the Deepwater Horizon spill.[234] More recently, ASTM created an online library that provides free, read-only access to all of its federally incorporated standards.[235]

229. *See* 49 C.F.R. § 192.121; *supra* note 216.

230. *See infra* Table 2.

231. *See supra* note 216.

232. *See PPI Publications*, PLASTICS PIPE INST., http://plasticpipe.org/publications/index.html (last visited Dec. 20, 2014). Even PPI's software appears to be available for free online use without registration, but subject to some terms. *See S-1 (2011) PPI BoreAid™*, PLASTIC PIPES INST., http://plasticpipe.org/publications/software-boreaid.html (last visited Dec. 20, 2014); *see also* Press Release, *Plastics Pipe Institute Launches Free On-Line Water Pipeline Planning Program* (Feb. 5, 2013, 10:12 AM), http://www.businesswire.com/news/home/20130205006322/en/Plastics-Pipe-Institute-Launches-Free-On-Line-Water#.VDNNyNh0zIU (discussing PPI's "new, free, on-line plastic pipe pressure design software for water distribution, transmission main systems and force mains").

233. *See Codes and Standards*, NAT'L FIRE PROTECTION ASS'N, http://www.nfpa.org/codes-and-standards/free-access (last visited Dec. 20, 2014).

234. *See* Bremer, *supra* note 2, at 177 & n.223.

235. *See Standards and Publications*, ASTM INT'L, http://www.astm.org/Standard/standards-and-publications.html (last visited Dec. 20, 2014).

These last three organizations, NFPA, API, and ASTM, require that users register and agree to the terms of a license in order to access the standards.

Thus, nearly half of PHMSA's standards (thirty-one of sixty-four, or 48%)[236] are available for free online independently of Section 24. These figures would be higher still but for a few apparent omissions from the online libraries maintained by API and ASTM. Although those libraries are supposed to include all standards incorporated by reference by any agency, a search for the standards incorporated by PHMSA could not verify free access to eight of API's twenty-two standards (36%) and three of ASTM's eleven standards (27%).[237] If rectified, two-thirds of PHMSA's standards (forty-two of sixty-four, or approximately 66%) would be free online without regard to Section 24.

TABLE 2: THE COST OF PHMSA'S INCORPORATED STANDARDS BY ORGANIZATION

Organization	Number of Standards Incorporated by PHMSA	Total Cost	Avg. Cost	Total Cost Using Non-Section 24 Free Access	Avg. Cost Using Non-Section 24 Free Access
AGA	1	$177.00	$177.00	$177.00	$177.00
API	22	$3,240.00	$147.27	$937.00[238]	$42.59
ASTM	14	$721.60	$51.54	$151.60[239]	$10.83
ASCE	1	$93.75	$93.75	$93.75	$93.75
ASME	11	$3,075.00	$279.55	$3,075.00	$279.55
GTI	4	$1,590.00	$397.50	$1,590.00	$397.50
MSS	2	$188.00	$94.00	$188.00	$94.00
NACE	2	$125.00	$62.50	$125.00	$62.50
NFPA	5	$267.50	$53.50	$0.00	$0.00
PRCI	1	N/A	N/A	N/A	N/A

236. *See supra* Table 2.

237. I last attempted to verify free online availability to these standards in May 2013. In some cases, a different edition of a PHMSA-incorporated standard was available for free. In other cases, no edition of a PHMSA-incorporated standard was available for free. It is possible that these omissions were an unintentional consequence of the organizations relying on NIST's SIBR Database to identify the standards to which free access was needed. *See supra* notes 212, 216 and accompanying text.

238. If API's library were completed, this figure would be $0.00.

239. If ASTM's library were completed, this figure would be $0.00.

Taking into account the free online access provided voluntarily by standards developers, the cost of a full set of PHMSA's standards is reduced by approximately one-third, from $9,477.85 to $6,337.35. If the API and ASTM online libraries were completed, the cost would be further reduced to $5,248.75. Table 2 summarizes the costs of PHMSA's incorporated standards by organization, both with and without considering the free online access provided independently of Section 24's free access mandate.

C. The Monopoly-Pricing Hypothesis

The data also provide an opportunity to evaluate whether, as some have argued, standards developers routinely engage in a kind of monopoly pricing by charging more for the incorporated version of a standard than for the current version of that same standard.[240] This monopoly-pricing hypothesis is based on the idea that incorporation by reference, because it makes a standard mandatory as a formal, legal matter, enables the standards developer to charge more for the standard than it would be able to charge in the absence of incorporation.[241] A standards developer that charges a significantly higher price for the incorporated version of a standard than for the current version of that same standard, it is argued, is improperly charging the higher price simply because the older version is law.[242] Proponents of this theory have offered discrete examples of such apparently nefarious pricing as evidence that the practice is widespread and should be addressed systemically.[243]

More than two-thirds (forty-four of sixty-four, or 69%) of the references in PHMSA's pipeline regulations are outdated, meaning that at least one more recent edition of each of these standards is now available.[244] For these forty-four standards, I identified the cost of both the incorporated and most current edition, tabulated all instances in which the standards developer charged more for the incorporated edition, and calculated the cost differential between the incorporated and current version of each standard. Two factors complicated this analysis. First, voluntary free read-only access is provided to some, but not all, standards and editions. Second, ASTM appears to have a highly

240. *See* Strauss, *supra* note 5 at 509–10.
241. *See id.*
242. *See id.*
243. *See id.*
244. *See supra* note 217.

formalized approach to pricing its standards. Different editions of the same standard are typically offered for exactly the same price, except that the current edition includes a redline showing the changes made from the previous edition. In these instances, however, a copy of the current standard is often offered without the redline for a modest discount. To address these complications, I constructed three data sets—one of edition prices alone, one of edition prices including voluntary free read-only access, and one of edition prices including the cost of the current edition purchased with an available redline.

As shown in Tables 3 and 4, the data reveal that the majority (six of eight) of the organizations either charges the same price (NACE, NFPA, and PPI) or slightly more (API, ASCE, and MSS) for the current edition(s) of PHMSA-incorporated standards. The data thus suggest that these standards developers are not engaged in monopoly pricing, at least not in the pipeline safety context.

TABLE 3: NUMBER OF INCORPORATED VERSIONS MORE EXPENSIVE THAN CURRENT EDITIONS

Organization	Incorporated Standards (Number of Outdated References)	Incorporated Edition More Expensive Than Current Edition	Incorporated Edition More Expensive Including Non-Section 24 Free Access	Incorporated Edition More Expensive Including Current Edition Plus Redline
API	22 (9)	5	5	5
ASTM	14 (14)	13	3	4
ASCE	1 (1)	0	0	0
ASME	11 (11)	4	4	4
MSS	2 (2)	0	0	0
NACE	2 (1)	0	0	0
NFPA	5 (5)	0	0	0
PPI	1 (1)	0	0	0
Total	58 (44)	22	12	13

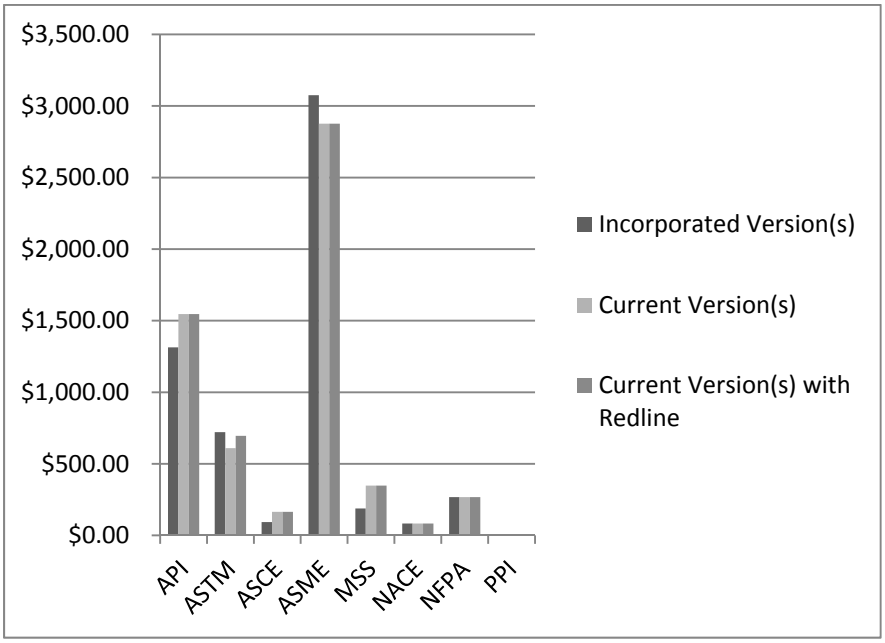
TABLE 4: TOTAL COST DIFFERENTIALS BETWEEN INCORPORATED AND CURRENT EDITIONS[245]

Organization	Number of Incorporated Standards (Number of Outdated References)	Price Differential Between Incorporated and Current Editions	Price Differential Including Non-Section 24 Free Access	Price Differential Including Current Edition Plus Redline
API	22 (9)	-$232.00	-$326.00	-$232.00
ASTM	14 (14)	111.60	-$458.40	$25.80
ASCE	1 (1)	-$71.25	-$71.25	-$71.25
ASME	11 (11)	$199.00	$199.00	$199.00
MSS	2 (2)	-$160.00	-$160.00	-$160.00
NACE	2 (1)	$0.00	$0.00	$0.00
NFPA	5 (5)	$0.00	$0.00	$0.00
PPI	1 (1)	$0.00	$0.00	$0.00
Total	58 (44)	-$152.65	-$816.65	-$238.45

The data also reveal, however, that the remaining two organizations (ASTM and ASME) do charge more for the incorporated editions of their standards than for the current editions of those same standards. This at least raises the question of whether these organizations are engaged in monopoly pricing. A closer examination is necessary to determine whether there might be one or more alternative explanations for these organizations' differential version pricing. Figure 1 compares edition-pricing data by organization.

245. In this table, negative figures indicate that incorporated editions are less expensive than current editions, and positive figures indicate that incorporated editions are more expensive than current editions.

FIGURE 1: TOTAL COST OF INCORPORATED VS. CURRENT EDITIONS BY ORGANIZATION



Even a cursory examination of Figure 1 suggests that ASTM's version-pricing differential may be attributable to its redline pricing practices. A full set of the incorporated versions of ASTM's standards costs $721.60.[246] A full set of the current versions of these standards costs $610.00 ($111.60 less than the incorporated versions) if purchased *without* the available redlines, but it costs $695.80 ($25.80 less than the incorporated versions) if purchased *with* the available redlines.[247] ASTM's redline practices thus appear to explain most of the pricing differential (approximately 77%) between ASTM's incorporated and current editions.

A closer examination of ASTM's edition costs appears to confirm this tentative conclusion, for it turns out that the only instances in which the incorporated edition of an ASTM standard is *more* expensive than the current edition is where no redline purchasing option is available for the current edition. For these four standards (representing 29% of ASTM's incorporated standards),[248] the only option is to purchase the current

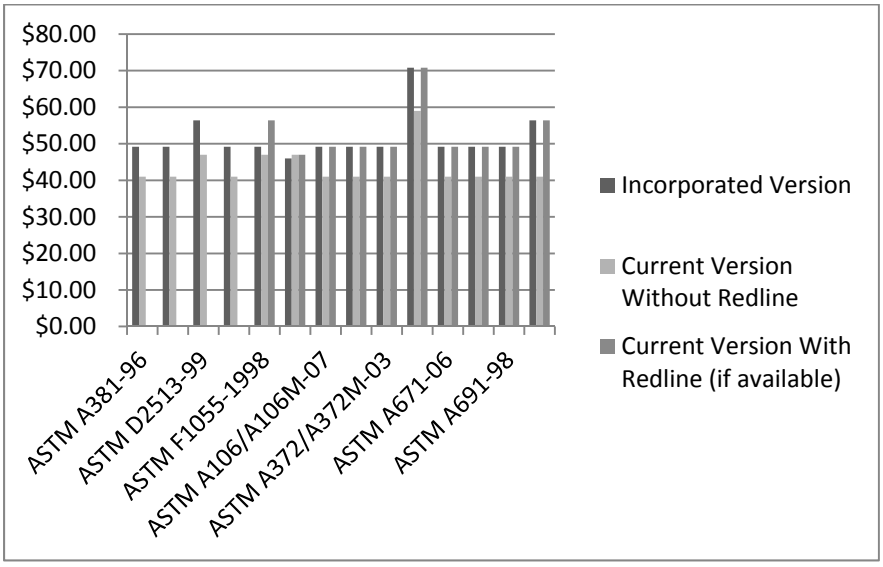
246. *See supra* Table 2.

247. *See supra* Figure 1.

248. *See supra* Table 2 (providing that the number of ASTM's total incorporated standards is

edition of the standard without a redline, at what appears to be a standardized discount.[249] Together, the incorporated editions of these four standards cost $240.00, while the current editions without redline cost $170.00, resulting in a price differential of $70.00.[250] For two (approximately 14%) of its other standards, ASTM charges just slightly more (a total differential of $8.20) for the current edition with redline ($103.40 total) than for the incorporated edition ($95.20 total).[251] For the remaining majority of its standards (eight of fourteen, or 57%), ASTM charges precisely the same amount for the current edition with redline as it charges for the incorporated edition.[252] The discount ASTM offers for a current edition without a redline also appears to be strictly standardized. This emerges in Figure 2, which shows the edition costs of ASTM's incorporated standards.

FIGURE 2: EDITION PRICES FOR ASTM'S INCORPORATED STANDARDS



A closer examination of ASME's pricing data suggests that it too may be engaged in something other than monopoly pricing. A full set of

fourteen).

249. *See* Figure 2.

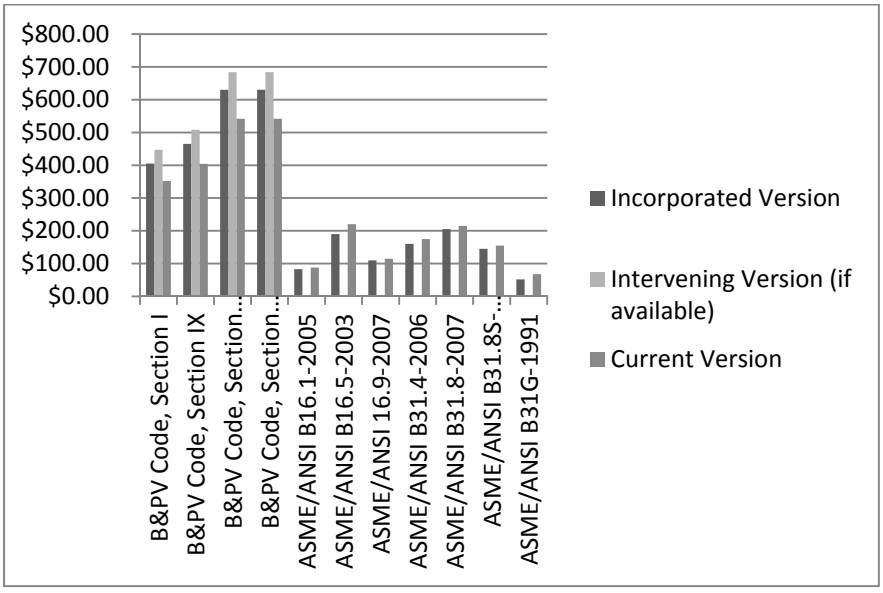
250. *See id.*

251. *See id.*

252. *See id.*

ASME's standards costs $3,075.00 for the incorporated editions and $2,876.00 for the current editions.[253] Overall, then, ASME charges $199.00 more for the incorporated editions of its standards than it does for the current editions of those same standards. For most (seven of eleven, or 64%) of its incorporated standards, however, ASME charges between $5.00 and $30.00 *more* for the current edition than it does for the incorporated edition.[254] All together, the current editions of these standards are $91.00 more expensive than the incorporated editions.[255] This data suggests that ASME is not engaged in monopoly pricing, at least with respect to the majority of its incorporated standards.

FIGURE 3: VERSION PRICING FOR OUTDATED REFERENCES TO ASME STANDARDS



The potentially troubling pricing affects only four (36%) of ASME's eleven standards, all of which are drawn from the 2007 edition of its signature publication, the Boiler and Pressure Vessel Code. Here, ASME charges between $53.00 and $88.00 more for the incorporated editions than it does for the current editions.[256] In total, the incorporated editions of these four standards cost $290.00 more than the current

253. *See supra* Figure 1.
254. *See supra* Figure 3.
255. *See id.*
256. *See supra* Figure 3.

editions.[257] There is an intervening 2010 edition of the Boiler and Pressure Vessel Code, however, which is more expensive than both the incorporated and current editions of the Code. This suggests the possibility that something other than simple monopoly pricing is going on here. This Code is widely used throughout the world, is relatively expensive, and is updated every three years. In these circumstances, a more reasonable hypothesis is that ASME offers an emerging edition at a reduced cost to encourage Code users to move to it and buy a new set, while progressively reducing the price of older editions.

Beyond this examination of the edition pricing for PHMSA's incorporated standards, there are other reasons to doubt the systemic validity of the monopoly-pricing hypothesis. First, it is rare that only one edition of a private standard—particularly one that is widely accepted—will alone have the force of law. More often, a number of different editions of a standard are given legal effect in multiple contexts by different government entities, including state agencies, local governments, and various federal agencies. The non-legal phenomena that give private standards de facto coercive effect also complicate the analysis, making it even more unlikely that standards development organizations will with any regularity have clear monopolistic power to charge more for an edition of a standard simply because it is "the law."[258] Second, the monopoly-pricing hypothesis is predicated on the false premise that the current edition of a standard is always the most or only valuable edition. In fact, older editions often remain authoritative for equipment, products, or processes created under those editions, even once a more current edition becomes available. PHMSA regulations expressly recognize this reality by providing that regulated parties using older equipment can comply with pipeline regulations by conforming to an older, appropriate edition of an incorporated standard.[259]

D. The Effort to Implement Section 24

PHMSA's efforts to implement Section 24 in its original, uncompromising formulation began immediately upon the law's January 2012 enactment and continued well past the January 2013 effective date. The agency interpreted Section 24 to have exclusively prospective effect,

---

257. *See id.*

258. *See supra* notes 176–79 and accompanying text.

259. *See, e.g.*, 49 C.F.R. § 192.7(c) (2014) ("Earlier editions of currently listed documents or editions of documents listed in previous editions of 49 CFR part 192 may be used for materials and components designed, manufactured, or installed in accordance with these earlier documents at the time they were listed.").

meaning that it would apply only to new or revised incorporations by reference and would not affect the standards already incorporated by reference into federal pipeline regulations. At the time of enactment, PHMSA was preparing to initiate rulemaking proceedings to update those regulations, but it did not believe the proceedings could be concluded before Section 24 became effective. The agency was thus forced to delay its proceeding and, in July 2012, held a public workshop and solicited public comments on how to comply with Section 24 without reducing the effectiveness of federal pipeline safety regulations, violating the requirements of the Tech Transfer Act and Circular A-119, or infringing copyright.[260] More than seventy people, including representatives of industry, the standards development community, and all levels of government attended the workshop in person, and more than 200 others participated in the Webcast of the event.[261] Although the event generated a lively and interesting discussion, it uncovered no simple solution to the agency's quandary.

With limited implementation options available to it, PHMSA focused on two broad strategies. First, the agency carefully evaluated its existing incorporations by reference. One goal of this analysis was to identify any private standards that could be removed from pipeline safety regulations without undermining public safety. For those standards indispensable to PHMSA's public safety mission, however, the agency further sought to determine how long the existing incorporations could be retained before the disparity between the incorporated and any newer edition of those standards would begin to pose a public safety problem.[262] Second, PHMSA expended considerable time and effort negotiating free access agreements with as many of its standards developers as possible. This task was easier to accomplish with those organizations that work in the pipeline and petroleum industry—as previously noted, the agency has better established working relationships and more leverage with these organizations. The negotiations were also a bit easier with the organizations that had decided to provide free access to incorporated standards independently of Section 24's requirements.

As of July 2013, after more than a year and a half of working on the issue, PHMSA was able to secure the required prospective free access

---

260. *See* Pipeline Safety: Notice of Public Workshop to Discuss Implementing Incorporation by Reference Requirements of Section 24 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, 77 Fed. Reg. 37,472 (June 21, 2012).

261. *See* 159 CONG. REC. H4496 (daily ed. July 16, 2013) (statement of Rep. Titus). I participated as a panelist in this workshop.

262. Private standards are regularly updated to reflect evolving technical knowledge and respond to engineering and safety problems that emerge only over the course of time and experience. *See* Bremer, *supra* note 2, at 137–38, 153.

agreements with seven (approximately 64%) of its eleven standards developers, including AGA, API, ASTM, GTI, MSS, NACE, and NFPA.[263] In keeping with the agency's interpretation of Section 24 as having exclusively prospective effect, the agreements contemplated free online access only to the standards that PHMSA may incorporate in future rulemakings. PHMSA did not reach an agreement with PRCI because the organization did not plan to update its only incorporated publication, which is currently out-of-print.[264] PPI did not respond to the agency's communications, perhaps because the organization already provides free online access to all of its publications as a matter of course. Finally, no agreement was reached with ASCE. Only one ASCE standard is incorporated by reference into federal pipeline regulations, however, and PHMSA does not currently plan to update that incorporation.

The most challenging holdout was ASME, which develops some of PHMSA's most expensive—and important—standards. As of July 2013, ASME and PHMSA were continuing to negotiate the possibility of ASME administratively creating a pipeline-specific standards book containing excerpts of the standards that PHMSA would need to incorporate by reference into its regulations. But by then it was clear that ASME would not be able to provide free online access to the full text of those standards because the organization relies so heavily on the significant revenue generated by the worldwide sale of those standards. As explained in further detail in Part V, this created a very difficult predicament for the agency.

In August 2013, Congress amended Section 24 in three ways that will give the agency greater flexibility, while still retaining the requirement that any incorporated standards be available to the public for free.[265] First, Congress extended the effective date of the provision to January 2015, giving the agency another year and a half to complete implementation.[266] Second, Congress removed standards incorporated by reference into guidance from Section 24's free access requirement.[267] Finally, and perhaps most importantly, Congress eliminated the requirement that incorporated standards be provided to the public for free "on an Internet Web site."[268] At this point, it is not clear what "free" will

263. *See* 159 CONG. REC. H4499 (daily ed. July 16, 2013) (statement of Rep. Brown).

264. *See supra* note 215 and accompanying text.

265. *See* 159 CONG. REC. H4496 (daily ed. July 16, 2013) (statement of Rep. Petri).

266. Availability of Pipeline Safety Regulatory Documents, Pub. L. No. 113-30, 127 Stat. 510 (2013).

267. *Id.*

268. *Id.*

mean beyond the public inspection that has long been required for incorporated materials.[269] It also remains to be seen whether PHMSA's free access agreements will remain viable under the law as amended.

V. EVALUATING THE SECTION 24 EXPERIMENT

A. The Benefits and Costs of Mandating Free Access

In its original, uncompromising formulation, Section 24 did expand the free online availability of private standards incorporated by reference into federal pipeline safety regulations. After all, PHMSA was able to negotiate free access agreements with seven of eleven (approximately 64%) of its standards development organizations. These agreements cover fifty (approximately 78%) of PHMSA's sixty-four standards. Overall, these agreements may reduce the cost of a full set of PHMSA's standards from $9,477.85 to $3,168.75. Although the maximum and minimum costs of PHMSA's standards would remain the same, the agreements may reduce the average cost of PHMSA's standards from $150.44 to $50.30.[270]

A more accurate quantitative analysis of Section 24's effects, however, should evaluate the law's success based on its marginal effect on the free online availability of PHMSA's incorporated standards. That is, based on the degree to which the law expanded free access beyond the level provided independently of its requirements. As explained above, several of PHMSA's standards developers offered free online access to their incorporated standards independently of PHMSA's efforts to implement Section 24. Taking this into account, Section 24 can be credited with precipitating free access agreements with four (approximately 36%) of PHMSA's eleven standards developers. Those agreements, however, cover just nine (approximately 14%) of PHMSA's incorporated standards. In this accounting, the cost reduction achieved as a result of Section 24, although meaningful, appears to be more modest. Table 6 illustrates the point.

---

269. *See* 159 CONG. REC. H4499 (daily ed. July 16, 2013) (letter from Carl Weimer, Exec. Dir., Pipeline Safety Trust).

270. This analysis is somewhat speculative, for three reasons. First, it assumes PHMSA would, in future rulemakings, incorporate by reference newer editions of precisely the same standards currently incorporated by reference. Second, it assumes that the new editions of those standards would be priced identically to the currently incorporated editions. Finally, now that the law has been amended, it is unclear whether the agreements negotiated in the face of the original, more demanding standard will remain viable. On this last point, only time will tell.

TABLE 6: COMPARISON OF NON-MEMBER COST OF PHMSA'S INCORPORATED STANDARDS

	Total Cost	Avg. Cost	Median Cost	Max Cost	Min. Cost
Current Incorporations	$9,477.85	$150.44	$112.00	$630.00	$0.00
Including Non-Section 24 Free Access	$6,337.35[271]	$100.59	$42.00	$630.00	$0.00
Also Including Section 24 Agreements	$3,168.75	$50.30	$0.00	$630.00	$0.00

It is essential, however, to look beyond the numbers to qualitatively evaluate the effects of Section 24 on PHMSA's operations and broader regulatory responsibility for ensuring federal pipeline safety. At the most basic level, the agency's efforts to implement the law were costly. Substantial agency resources, particularly in terms of the agency staff's time and attention, were devoted to the issue for over a year and a half. This has continued even under the amended version of the law, although perhaps to a somewhat lesser degree. In addition, the agency was forced to delay update to its regulations and incorporated standards. Many agencies find it challenging to keep incorporations up-to-date as newer editions of standards become available. PHMSA has a specific statutory responsibility to keep its incorporations up-to-date, and in the past it has taken a disciplined approach to updating that has enabled it to fulfill that responsibility.[272] Section 24 derailed the agency in this respect, requiring it to delay rulemaking proceedings that had already been initiated.

The most troubling consequence of Section 24, at least in its original formulation, was that PHMSA was faced with the prospect of no longer being able to use some of its most important standards—standards that are important to industry regardless of whether they are integrated into federal regulations. ASME's Boiler and Pressure Vessel Code, several sections of which are incorporated by reference into pipeline safety regulations, is one such standard. This code has been in continuous development by ASME since 1914.[273] Adopted as law in all 50 states

271. As previously noted, *see supra* notes 230–39 and accompanying text, if the API and ASTM libraries were completed, this figure would be $5,248.75.

272. *See* 49 U.S.C. § 60102(l) (2012).

273. *See ASME Boiler and Pressure Vessel Code*, ASME, https://www.asme.org/about-

and incorporated by reference by numerous other federal agencies, the Boiler Code has been the de facto national standard since at least the 1950s and the de facto international standard since 1972.[274] It is a large, complex code: its 14,000 pages are divided into 28 volumes. And it is used in many different industries, providing authoritative standards for everything from residential boilers and water heaters to equipment used in nuclear power plants. It is truly a living document, continuously updated and refined through addenda and interpretations, with a new edition released every three years. This requires an incredible amount of manpower and resources—multiple committees are devoted to maintaining the Code, and over 1,000 volunteers contribute their time and expertise to its development.

PHMSA could not possibly create its own standards to replace even just the few sections of ASME's Boiler and Pressure Vessel Code that are incorporated by reference into federal pipeline safety regulations. The agency has neither the technical expertise nor the resources to do so. And even if it did, such an effort would face other, far more significant hurdles. The resulting standard would likely turn out to be inconsistent or incompatible with the Boiler Code, in ways that may well be unforeseeable. Regulated parties would find themselves subject to conflicting obligations from multiple sovereigns. Equipment and parts conforming to the PHMSA-unique standards would likely not be available in a marketplace dominated by ASME's competing code.

By the summer of 2013, when it was clear that PHMSA would not be able to secure free online access to ASME's standards, including certain sections of the Boiler Code, PHMSA and ASME were discussing the possibility of ASME creating a PHMSA-specific standards supplement that would contain only the material essential to pipeline safety regulation. The supplement would be developed by ASME administratively (as opposed to through one of ASME's a technical committees) and would be made available for free online. This solution would not be ideal, for several reasons. Regulated parties would be put in the position of needing to comply with both ASME's actual standards and the versions of those standards contained in the PHMSA-specific supplement. Conflicts would be likely. PHMSA's rule writers are not technical experts and would be poorly positioned to evaluate both the technical sufficiency of the supplement and its consistency with ASME's

---

asme/who-we-are/engineering-history/landmarks/138-asme-boiler-and-pressure-vessel-code (last visited Dec. 20, 2014).

274. *See id.*

actual standards and PHMSA's other regulations and incorporated standards. Nor would PHMSA have the independent authority to determine the contents of the supplement or the frequency with which it was updated

PHMSA's experience demonstrates the need for agencies to retain the flexibility to smoothly integrate federal regulatory requirements with dominant, pre-existing private regulatory regimes that are both technically sophisticated and highly complex. Transparency is an important administrative value—but is not the only value at stake. Ideally, all private standards incorporated by reference should be freely available to the public online. In some cases, however, insisting on this ideal may imperil other important regulatory goals, making regulation both more burdensome and expensive and also less clear and technically sophisticated. It may deprive agencies of the benefits of drawing on significant expertise that exists outside government. It may also impede agencies' ability to smoothly integrate federal regulations with the vast and complex world of private standards. In short, the cost of free access may be reduced regulatory quality and public protection.

B. Collaborating to Expand Public Access

Section 24's principal defect was that it took a one-dimensional approach to a multidimensional problem. It required free online access to incorporated private standards without addressing the agency's competing legal obligations to use available voluntary consensus standards and observe and protect its standards developers' copyrights. This created a quandary for the agency, for in some cases it proved impossible to comply simultaneously with Section 24, Circular A-119 and the Tech Transfer Act, and copyright law. Worst of all, it endangered the agency's ability to faithfully carry out its important public safety mission.

The cost analysis of PHMSA's standards suggests that incorporation by reference's public access problem is neither as uniform nor as egregious as some have suggested. A majority of the standards were available online for free, independent of Section 24's requirements. Although this access is almost always read-only, that should be sufficient if the goal is to allow the general public to read standards that have the force of law. That standards developers generally require users to agree to an intellectual property license appears similarly reasonable if the goal is to further public access while still preserving the ability of standards developers to recoup the significant costs of the standards development process. Although the cumulative cost to purchase a full set of the standards seems quite high even when taking into account available free

access, it is unlikely that members of the general public will often find a need to purchase a full set. More likely, they will be interested to see one or just a few standards in connection with a particular rulemaking. From this perspective, the average and median costs of PHMSA's incorporated standards do not seem to be "excessive." The most expensive standards are the sections of ASME's Boiler and Pressure Vessel Code. In light of the significant costs of developing and maintaining that code, and its importance outside the pipeline safety context, it is not immediately clear that even its price is unreasonable. What is clear is that Section 24's approach was too aggressive as applied to most of PHMSA's incorporated standards.

PHMSA's experience with Section 24 strongly suggests that a better way to address incorporation by reference's public access problem is through a more nuanced, compromising, and collaborative solution. Before putting the force of law behind a private standard, agencies should consider not only the standard's fitness for purpose and the quality of the process through which it was developed, but also the conditions under which it will be available to the public. Although federal law already recognizes these principles, the latter has taken on new importance in this new age of open, electronic government. When incorporating private standards by reference, agencies must take responsibility for ensuring those standards are reasonably available to the public. In carrying out this responsibility, agencies should work with standards developers in pursuit of the ideal of free online access, but with the willingness to compromise when doing so is necessary to promote other important administrative values and fulfill regulatory responsibilities, including protecting public health and safety. A bald free access requirement such as that embodied in Section 24 imprudently deprives agencies of the flexibility to use their informed, expert judgment to strike the right balance in individual circumstances.

There is good reason to believe that this collaborative approach can succeed. Many standards developers already provide free access to their standards, and there appears to be momentum building in that direction. ASTM's recent decision to create an online library of all its incorporated standards is a highly significant development. As the largest standards developer in the United States, this decision affects nearly one quarter of the incorporations by reference in the CFR. ANSI also recently launched a centralized online library that allows standards developers to provide free read-only access to their incorporated standards even if they lack the resources to develop the necessary technological infrastructure

themselves.[275] Finally, it is notable that PHMSA's success in implementing Section 24 was achieved only through collaboration with its standards developers. Other agencies can do the same—and without being forced into the kind of quandary created by Section 24.

C. Expanding Public Access through Federal Depository Libraries

In addition to the collaborative solution urged above, Congress could amend federal law to require agencies to make a copy of all incorporated private standards available in federal depository libraries.[276] This could be accomplished under the auspices of the Federal Depository Library Program (FDLP), through which GPO distributes government publications to over 1,200 libraries nationwide.[277] Participating libraries must provide the general public with free access to those publications.[278] Individual agencies are responsible for furnishing to GPO a list of publications to be included in the program,[279] and must bear the printing and binding costs of any non-GMO publications.[280] Under current law, only "government publication[s]," defined as "informational matter which is published as an individual document at Government expense, or as required by law," are eligible for inclusion in the FDLP.[281] As previously explained, agencies are technically "required by law" to publish any private material given legal effect in federal regulations, but that obligation is fulfilled through incorporation by reference.[282] The "individual document" containing the full text of the incorporated material is privately published, however, at the expense not of the government, but of the private standards developer. Thus, including such materials in the FDLP collection would require legislative action. As under current law, agencies would presumably be responsible for

276. *See ANSI Launches Online Portal for Standards Incorporated by Reference*, ANSI (Oct. 28, 2013), http://www.ansi.org/news_publications/news_story.aspx?menuid=7&articleid=e6e2ff18-d2fd-4886-91f4-fcbcf5b9d145.

276. Although private standards are the focus of this article, the requirement could extend to the variety of privately authored, copyrighted materials that are incorporated by reference in federal regulations. *See* Bremer, *supra* note 2, at 145–47.

277. *See What is a Federal Depository Library?*, U.S. GOV'T PRINTING OFFICE, http://www.gpo.gov/libraries/public/ (last visited Dec. 20, 2014).

278. *See* 44 U.S.C. § 1911 (2012). Publications in the federal collection may be in hard copy or electronic format, but electronic materials are accessible only in libraries and not via the Internet.

279. *See* 44 U.S.C. § 1902. The list must include "government publications, except those determined by their issuing components to be required for official use only or for strictly administrative or operational purposes which have no public interest or educational value and publications classified for reasons of national security . . . ."

280. *See* 44 U.S.C. § 1903.

281. *See* 44 U.S.C. § 1901.

282. *See supra* Part II.A.

including incorporated standards in their distribution lists for GPO, negotiating any necessary licensing agreements with private standards developers, and purchasing the paper or electronic copies to be distributed to federal depository libraries.

This compromise would be an admittedly imperfect solution. It would not address the problem of public access to private standards that may be—but are not yet—incorporated by reference. Agencies would still need to work with standards developers to provide access during the rulemaking process, although the goal is more achievable under such naturally time-limited circumstances. In addition, the library solution is bound to be expensive. The up-front costs of transitioning the thousands of existing standards incorporated by reference into the FDLP would be considerable, and perhaps even prohibitive. Going forward, individual agencies would have to pay private standards developers for over 1,200 copies of each incorporated standard. Perhaps costs could be contained by limiting the requirement to incorporated standards not otherwise available for free online. Such a limitation would reduce the incentive for standards developers to provide free online access, however, undermining collaborative efforts and perhaps even putting the ideal of free online access out of reach. Finally, it is a compromise unlikely to satisfy free access advocates who believe that free and unrestricted online access is not merely the ideal, but the only acceptable outcome.

VI. CONCLUSION

Crafting an effective, workable strategy for expanding public access to private standards incorporated into federal regulations is a surprisingly difficult challenge. Ideally, these standards would be freely available to the public online, as are federal rulemaking dockets and regulations. Copyright is the most obvious barrier to achieving this ideal, but the real difficulties run much deeper. The United States has a robust, highly decentralized, predominantly private standards system, and a variety of forces often give private standards de facto authoritative status. Federal law and policy generally require agencies to use available, privately developed voluntary consensus standards. This policy yields significant benefits to federal agencies and the public. Yet even beyond this, the ability of federal agencies to carry out their regulatory missions and protect public health and safety frequently requires that private standards be seamlessly integrated into federal regulatory requirements.

Although a free access mandate like Section 24 has an alluring simplicity, a more flexible, collaborative approach holds greater promise for improving public access to incorporated standards without undermining other important public policies, values, and priorities. Over

the long history of the public-private partnership in standards, the private sector has demonstrated both the willingness and ability to evolve in response to new public needs. This case study of federal pipeline regulations and PHMSA's experience working to implement Section 24 strongly suggests that private standards developers are already responding to the emerging public need for expanded online access to incorporated standards. Rather than abandoning a public-private partnership that has worked so well for so long, federal agencies and private standards development organizations should now rely on that partnership to effectively address the multidimensional problem of expanding public access to incorporated standards.