UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS d/b/a/ ASTM INTERNATIONAL; NATIONAL FIRE PROTECTION ASSOCIATION, INC.; and AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS, Plaintiffs/ Counter-Defendants, v. PUBLIC.RESOURCE.ORG, INC., Defendant/ Counter-Plaintiff.	Case No. 1:13-cv-01215-TSC

DECLARATION OF JORDANA S. RUBEL

Pursuant to 28 U.S.C. § 1746, I, Jordana S. Rubel, declare the following statements to be true under the penalties of perjury:

1. I am over the age of 18 years and am fully competent to testify to the matters stated in this Declaration.

2. This declaration is based on my personal knowledge. If called to do so, I would and could testify to the matters stated herein.

3. I am an associate at Morgan Lewis & Bockius LLP, which represents Plaintiff American Society for Testing and Materials in this matter.

4. Attached as Exhibit 1 is a true and correct copy of the Expert Report of John C. Jarosz that was served on June 5, 2015.

5. Attached as Exhibit 2 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of Public.Resource.Org, Inc., which took place on February 26, 2015.

6. Attached as Exhibit 3 are true and correct copies of excerpts of the transcript of the deposition of Carl Malamud, which took place on February 27, 2015.

7. Attached as Exhibit 4 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of Point.B Studio, which took place on November 13, 2014.

8. Attached as Exhibit 5 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of HTC Global, Inc., which took place on November 5, 2014.

9. Attached as Exhibit 6 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of Christian Dubay on behalf of the National Fire Protection Association, Inc., which took place on April 1, 2015.

10. Attached as Exhibit 7 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of Stephanie Reiniche on behalf of the American Society for Heating, Refrigerating and Air Conditioning Engineers, which took place on March 30, 2015.

11. Attached as Exhibit 8 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of Steven Comstock on behalf of the American Society for Heating, Refrigerating and Air Conditioning Engineers, which took place on March 5, 2015.

12. Public.Resource.Org, Inc. ("Defendant") submitted Freedom of Information Act ("FOIA") requests to a number of executive agencies requesting copies of standards that are incorporated by reference in federal regulations. Attached as Exhibit 9 are true and correct copies of letters of requests Public.Resource.Org, Inc. submitted to the U.S. Department of Housing and Urban Develop and the U.S. Consumer Product Safety Commission that were downloaded from Defendant's website.

13. No agency has provided Defendant with copies of the standards it has requested through these FOIA requests. Numerous federal agencies have explicitly taken the position in communications with Defendant that incorporation by reference of materials into regulations does not destroy the copyright in those materials. Attached as Exhibit 10 are true and correct copies of letters to Defendant from the U.S. Department of Interior, the U.S. Department of Housing and Urban Development and the U.S. Consumer Product Safety Commission that were downloaded from Defendant's website.

14. Attached as Exhibit 11 are true and correct copies of excerpts from Defendant's responses to interrogatories served by American Society for Testing and Materials. Defendant did not serve supplemented responses to these interrogatories.

15. Copies of 43 of Defendant's versions of ASTM's standards at issue, with Defendant's cover page, were uploaded by "dharlanuctcom" onto the Scribd platform. *See* https://www.scribd.com/dharlanuctcom. Attached as Exhibit 12 is a true and correct copy of a printout of a page showing uploads made by dharlanuctcom to the Scribd platform.

16. Even after Mr. Malamud was notified of specific errors in Defendant's versions of Plaintiffs' standards that were posted on Defendant's website, Defendant did not correct those mistakes and maintained versions of the standards that contained these errors on its website until it removed its copies of Plaintiffs' standards in November 2015 at the Court's suggestion.

17. Attached as Exhibit 13 is a true and correct copy of Exhibit 55 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

18. Attached as Exhibit 14 is a true and correct copy of Exhibit 33 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

19. Attached as Exhibit 15 is a true and correct copy of Exhibit 69 to the deposition of Carl Malamud.

20. Attached as Exhibit 16 is a true and correct copy of Exhibit 63 to the deposition of Carl Malamud.

21. Attached as Exhibit 17 is a true and correct copy of Exhibit 2 to the 30(b)(6) deposition of HTC Global.

22. Attached as Exhibit 18 is a true and correct copy of excerpts from the expert deposition of James Fruchterman, which took place on July 31, 2015.

23. Attached as Exhibit 19 is a true and correct copy of Exhibit 21 to the 30(b)(6) deposition of Point.B Studio.

24. Attached as Exhibit 20 is a true and correct copy of Exhibit 57 to the deposition of Carl Malamud.

25. Attached as Exhibit 21 is a true and correct copy of Exhibit 62 to the deposition of Carl Malamud.

26. Attached as Exhibit 22 is a true and correct copy of Exhibit 18 to the 30(b)(6) deposition of Point.B Studio.

27. Attached as Exhibit 23 are true and correct copies of Exhibits 52 and 53 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

28. Attached as Exhibit 24 is a true and correct copy of Exhibit 75 to the deposition of Carl Malamud.

29. Attached as Exhibit 25 are true and correct copies of documents Bates stamped PRO_00082474, PRO_00082837, and PRO_00083112, which were produced by Public.Resource.Org, Inc.

30. Attached as Exhibit 26 is a true and correct copy of a document Bates stamped PRO_00101955-57, which was produced by Public.Resource.Org, Inc.

31. Attached as Exhibit 27 is a true and correct copy of Exhibit 38 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

32. Attached as Exhibit 28 is a true and correct copy of Exhibit 40 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

33. Attached as Exhibit 29 is a true and correct copy of Exhibit 64 to the deposition of Carl Malamud.

34. Attached as Exhibit 30 is a true and correct copy of Exhibit 58 to the deposition of Carl Malamud.

35. Attached as Exhibit 31 is a true and correct copy of Exhibit 59 to the deposition of Carl Malamud.

36. Attached as Exhibit 32 is a true and correct copy of a document I downloaded from the law.resource.org website on November 19, 2015.

37. Attached as Exhibit 33 is a true and correct copy of Exhibit 77 to the deposition of Carl Malamud.

38. Attached as Exhibit 34 is a true and correct copy of Exhibit 65 to the deposition of Carl Malamud.

39. Attached as Exhibit 35 is a true and correct copy of Exhibit 27 to the 30(b)(6) deposition of Point.B Studio.

40. Attached as Exhibit 36 is a true and correct copy of Exhibit 73 to the deposition of Carl Malamud.

41. Attached as Exhibit 37 is a true and correct copy of Exhibit 49 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

42. Attached as Exhibit 38 is a true and correct copy of Exhibit 43 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

43. Attached as Exhibit 39 is a true and correct copy of Exhibit 51 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

44. Attached as Exhibit 40 is a true and correct copy of Exhibit 44 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

45. Attached as Exhibit 41 is a true and correct copy of Exhibit 54 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

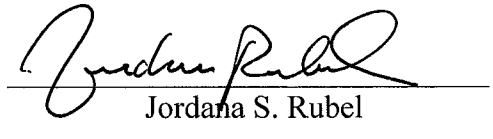
46. Attached as Exhibit 42 is a true and correct copy of Exhibit 56 to the 30(b)(6) deposition of Public.Resource.Org, Inc.

47. Attached as Exhibit 43 is a true and correct copy of Exhibit 76 to the deposition of Carl Malamud.

48. Attached as Exhibit 44 is a true and correct copy of Exhibit 70 to the deposition of Carl Malamud.

49. Attached as Exhibit 45 are true and correct copies of excerpts of the transcript of the 30(b)(6) deposition of Bruce Mullen on behalf of on the American Society for Heating, Refrigerating and Air Conditioning Engineers, which took place on March 31, 2015.

Dated: November 19, 2015



Jordana S. Rubel

EXHIBIT 1

FILED UNDER SEAL

EXHIBIT 2

UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS D/B/A ASTM INTERNATIONAL; NATIONAL FIRE PROTECTION, INC.; AND AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.

Plaintiffs,/
Counter-Defendants,

Case No.:

vs.

1:13-cv-01215-EGS

PUBLIC.RESOURCE.ORG, INC.

Defendant/
Counter-Plaintiff
_____/

VIDEOTAPED DEPOSITION OF THE 30 b) 6) OF
PUBLIC.RESOURCE.ORG

DATE: Thursday, February 26, 2015

TIME: 10:07

LOCATION: 1 Market Street, Spear Tower, Suite 2000, San Francisco, California

Reported by: Ashley Soevyn
Certified Shorthand Reporter
License Number 12019

Resource? 10:23:05AM
A I am. 10:23:06AM
Q What is your position at Public Resource at this time? 10:23:08AM
10:23:10AM
A I'm the president and founder. 10:23:11AM
Q Has that been your title ever since you founded Public Resource? 10:23:14AM
10:23:16AM
A Yes. 10:23:18AM
Q Is that a full-time position? 10:23:20AM
A It is. 10:23:24AM
Q Do you do any other work that leads to any sort of compensation other than your work for Public Resource at this time? 10:23:26AM
10:23:30AM
10:23:32AM
A I do not. 10:23:34AM
Q As the president and founder of Public Resource, what are your job responsibilities? 10:23:37AM
10:23:39AM
MR. BRIDGES: Objection, vague and ambiguous. 10:23:46AM
10:23:46AM
THE WITNESS: I run the corporation. 10:23:51AM
BY MR. FEE: 10:23:53AM
Q Okay. Can you be any more specific than that? 10:23:53AM
10:23:59AM
MR. BRIDGES: Same objection. 10:24:00AM
THE WITNESS: I speak. I program. I run computers. 10:24:03AM
10:24:06AM

BY MR. FEE: 10:24:07AM
Q What is Public Resource? 10:24:09AM
MR. BRIDGES: Objection, vague and ambiguous. 10:24:12AM
THE WITNESS: A 501(c)(3) nonprofit corporation. 10:24:13AM
BY MR. FEE: 10:24:19AM
Q What products or services does Public Resource provide? 10:24:20AM
MR. BRIDGES: Objection, vague and ambiguous, argumentative. 10:24:22AM
THE WITNESS: We make government information more broadly available to inform citizens. 10:24:23AM
BY MR. FEE: 10:24:25AM
Q How does Public Resource do that? 10:24:31AM
A I'm sorry? 10:24:32AM
Q How does Public Resource do that? 10:24:35AM
A We use the Internet. 10:24:35AM
Q At this point in time, do you own any controlling interest in the corporation, or do you hold any positions for any nonprofit organizations other than Public Resource? 10:24:39AM
MR. BRIDGES: Objection, compound. 10:24:42AM
MR. FEE: It is compound. I'll break that 10:24:43AM 10:24:46AM 10:25:03AM 10:25:07AM 10:25:09AM 10:25:13AM 10:25:15AM 10:25:17AM

down. Let me re-ask that. 10:25:19AM

BY MR. FEE: 10:25:21AM

Q First of all, do you own a controlling interest in any corporation putting aside what you do for Public Resource? 10:25:21AM 10:25:23AM 10:25:27AM

A No, I do not. 10:25:29AM

Q Do you have a role in connection with any nonprofit organization other than Public Resource at -- 10:25:31AM 10:25:34AM 10:25:38AM

MR. BRIDGES: Objection, vague and ambiguous. 10:25:38AM 10:25:39AM

BY MR. FEE: 10:25:39AM

Q -- at this time? 10:25:40AM

MR. BRIDGES: Objection, vague and ambiguous. 10:25:40AM 10:25:40AM

THE WITNESS: I'm on the board of directors of Common Crawl, a 501(c)(3) nonprofit corporation. 10:25:41AM 10:25:42AM 10:25:46AM

BY MR. FEE: 10:25:48AM

Q Any others? 10:25:49AM

A No, sir. 10:25:51AM

MR. BRIDGES: Just leave me time to object. I should have objected to that one. 10:25:52AM 10:25:52AM

BY MR. FEE: 10:25:56AM

Q What is Common Crawl? 10:25:56AM

THE WITNESS: And -- and manage those objects, yes. 10:31:03AM

BY MR. FEE: 10:31:04AM

Q Can you explain to me what the basis is for that belief? 10:31:05AM

A Well, there are a large number of collections on the Internet Archive, such as the Grateful Dead Archive, for example. 10:31:08AM

Q Has Public.Resource.Org ever posted any materials to the Internet Archive? 10:31:11AM

A Yes. 10:31:13AM

Q Does Public Resource have any employees besides yourself? 10:31:16AM

A No. 10:31:20AM

Q Since its found -- founding, did Public Resource have any employees other than yourself? 10:31:24AM

A Yes, I had one employee. 10:31:26AM

Q Who is that? 10:31:37AM

A Joel Hardi, H-A-R-D-I. 10:31:39AM

Q What was Joel Hardi's role at Public Resource while he was there? 10:31:41AM

A He was a systems administrator and programmer. 10:31:43AM

Q During what time frame did Mr. Hardi work at Public Resource? 10:31:46AM

A No, that was it. 11:07:41AM
Oh, I'm sorry. I got e-mail from 11:08:10AM
Mr. Cooper at ANSI as well. 11:08:13AM
Q Do you recall the substance of that 11:08:16AM
e-mail? 11:08:18AM
A I think he liked the packaging. 11:08:18AM
THE REPORTER: You said that he's from 11:08:24AM
ANSI? 11:08:24AM
THE WITNESS: A-N-S-I, American National 11:08:24AM
Standards Institution -- or Institute. 11:08:30AM
BY MR. FEE: 11:08:34AM
Q When you were purchasing the 73 standards, 11:08:35AM
why did you decide to buy paper copies as opposed to 11:08:38AM
electronic copies? 11:08:41AM
MR. BRIDGES: Objection, vague, ambiguous, 11:08:43AM
relevance. 11:08:44AM
THE WITNESS: It's by far the easiest way 11:08:45AM
to process them. 11:08:48AM
BY MR. FEE: 11:08:49AM
Q Can you explain why it would be easier to 11:08:50AM
process paper documents than to, for example, print 11:08:53AM
electronic copies? 11:08:56AM
A A paper document you throw it on a scanner 11:08:57AM
and you scan it. 11:09:01AM
Q So you take the paper and make an 11:09:02AM

electronic copy as opposed to just having the electronic copy? 11:09:05AM 11:09:08AM

MR. BRIDGES: I'll object -- I object. Argumentative terminology, vague and ambiguous. 11:09:09AM 11:09:10AM

THE WITNESS: Yes, you scan it and make an electronic copy. 11:09:12AM 11:09:14AM

BY MR. FEE: 11:09:15AM

Q So wouldn't it have been easier to purchase electronic copies from the standards organizations? 11:09:16AM 11:09:19AM 11:09:21AM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous, argumentative. 11:09:22AM 11:09:23AM

THE WITNESS: No, it wouldn't be. 11:09:26AM

BY MR. FEE: 11:09:28AM

Q And your decision to buy paper copies as opposed to electronic copies was not in order to avoid any terms of use in connection with a license agreement of an electronic copy? 11:09:28AM 11:09:32AM 11:09:34AM 11:09:39AM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 11:09:41AM 11:09:42AM

THE WITNESS: Both terms of use and the way a PDF document are packaged make them much harder to work with. 11:09:43AM 11:09:47AM 11:09:53AM

BY MR. FEE: 11:09:54AM

Q If you had purchased an electronic copy of 11:09:55AM

in many news media reports, for example. 11:29:55AM
BY MR. FEE: 11:29:58AM
Q Are you aware of any individuals who 11:29:58AM
actually had a problem accessing one of the 11:30:00AM
plaintiffs' standards and -- and that were governed 11:30:03AM
by those standards via incorporation by reference? 11:30:06AM
MR. BRIDGES: All the same objections as I 11:30:13AM
last said. 11:30:14AM
THE WITNESS: Yes, I am. 11:30:15AM
BY MR. FEE: 11:30:16AM
Q Identify all those for me. 11:30:16AM
A I don't know if I can identify all of 11:30:17AM
them, but can -- can I -- 11:30:19AM
Q Identify all that you can think of sitting 11:30:21AM
here right now. 11:30:23AM
A Okay. Mr. Carl Weimer is the executive 11:30:24AM
director of the Pipeline Safety Trust. 11:30:29AM
MR. BRIDGES: You've been asked to 11:30:35AM
identify the individuals. That's what he's asked 11:30:35AM
you to do. 11:30:39AM
BY MR. FEE: 11:30:41AM
Q Who else. 11:30:41AM
A There were a large number of submissions 11:30:46AM
to federal information gathering that included 11:30:52AM
submissions by groups that complained about lack of 11:31:01AM

access. 11:31:06AM
Q Any others that you can identify? 11:31:07AM
MR. BRIDGES: Same -- same objections as 11:31:10AM
to my earlier -- as -- as my earlier objections. 11:31:12AM
THE WITNESS: Again, in the dockets there 11:31:16AM
were a large number of groups that identified 11:31:18AM
access problems. 11:31:22AM
BY MR. FEE: 11:31:22AM
Q But the only individual that you've 11:31:23AM
identified is Carl Weimer; is that right? 11:31:25AM
A That I -- 11:31:27AM
MR. BRIDGES: Same -- same objections as 11:31:30AM
my earlier ones. 11:31:31AM
THE WITNESS: The only one identified by 11:31:33AM
name, yes. 11:31:34AM
BY MR. FEE: 11:31:34AM
Q And Mr. Weimer, as you said, was the 11:31:35AM
executive director of Pipeline Safety Trust; is that 11:31:35AM
right? 11:31:39AM
A Yes. 11:31:40AM
Q And what did he tell you about his 11:31:41AM
inability to access one of the plaintiffs' 11:31:43AM
standards? 11:31:45AM
MR. BRIDGES: Objection, lacks foundation, 11:31:46AM
vague and ambiguous. 11:31:47AM

THE WITNESS: He spoke at a information gathering process at PHMSA, P-H-M-S-A, which is a federal government agency. 11:31:52AM 11:31:54AM 11:32:05AM

MR. BRIDGES: I'll ask the witness to listen to the question and to answer the question. 11:32:07AM 11:32:08AM

THE WITNESS: Okay. 11:32:10AM

BY MR. FEE: 11:32:11AM

Q So what did Mr. Weimer say about his inability to access plaintiffs' standards? 11:32:15AM 11:32:18AM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 11:32:24AM 11:32:25AM

THE WITNESS: He said that lack of availability of the standards was a significant issue for him. 11:32:27AM 11:32:27AM 11:32:33AM

MR. FEE: Did he identify the lack of availability of one of the plaintiffs' standards in particular? 11:32:34AM 11:32:37AM 11:32:41AM

A I don't recall. 11:32:42AM

Q Did he explain to you or to -- this is a group speech he made; is that what you said? He made a presentation? 11:32:42AM 11:32:44AM 11:32:46AM

MR. BRIDGES: Objection, compound, vague and ambiguous. 11:32:47AM 11:32:49AM

THE WITNESS: It was testimony before a federal proceeding. 11:32:50AM 11:32:52AM

BY MR. FEE: 11:32:53AM

Q During his testimony did Mr. Weimer explain why he was unable to access any standards through reading rooms who were purchasing copies of those standards? 11:32:54AM 11:32:57AM 11:33:00AM 11:33:04AM

MR. BRIDGES: Objection, lacks foundation, argumentative, vague and ambiguous. 11:33:05AM 11:33:06AM

THE WITNESS: I don't recall. 11:33:08AM

BY MR. FEE: 11:33:08AM

Q Do you recall any explanation as to why Mr. Weimer could not access any of the plaintiffs' standards? 11:33:08AM 11:33:10AM 11:33:13AM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 11:33:15AM 11:33:16AM

THE WITNESS: I don't recall. 11:33:18AM

BY MR. FEE: 11:33:18AM

Q Do you recall any testimony about why Mr. Weimer couldn't access any standard that had been incorporated by reference by any governmental agency? 11:33:19AM 11:33:20AM 11:33:23AM 11:33:26AM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 11:33:28AM 11:33:28AM

THE WITNESS: I remember the general topic of his testimony, but not the specifics. 11:33:37AM 11:33:39AM

BY MR. FEE: 11:33:41AM

Q So you can't recall any circumstance that prevented him from accessing any particular standard? 11:33:42AM 11:33:46AM 11:33:49AM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 11:33:50AM 11:33:50AM

THE WITNESS: I -- I don't recall. 11:33:52AM

BY MR. FEE: 11:33:52AM

Q Can you identify any circumstances in which any home builder, for example, was unable to access standards that were incorporated by reference that might be relevant to someone building a home? 11:33:53AM 11:33:55AM 11:33:58AM 11:34:00AM

MR. BRIDGES: Objection, competence, may call for speculation, vague and ambiguous, lacks foundation. 11:34:04AM 11:34:07AM 11:34:09AM

THE WITNESS: Mr. Peterson related such a story. 11:34:11AM 11:34:13AM

BY MR. FEE: 11:34:15AM

Q Any others? 11:34:17AM

MR. BRIDGES: Same objections. 11:34:19AM

THE WITNESS: I don't recall. 11:34:22AM

BY MR. FEE: 11:34:22AM

Q So Mr. Peterson identified one instance in which a home builder was unable to access a standard as incorporated by reference? 11:34:23AM 11:34:26AM 11:34:29AM

MR. BRIDGES: Same objections. 11:34:32AM

THE WITNESS: It's in a video on our website. 11:34:34AM 11:34:37AM

BY MR. FEE: 11:34:37AM

Q And it's one home builder? 11:34:39AM

MR. BRIDGES: Same objection. 11:34:44AM

THE WITNESS: I -- I don't recall. 11:34:45AM

BY MR. FEE: 11:34:45AM

Q Do you recall there being more than one home builder that he referenced? 11:34:45AM 11:34:47AM

A I'd have to review the transcript to see if he was speaking about one or many. 11:34:49AM 11:34:52AM

MR. BRIDGES: The answer (sic) is do you recall. 11:34:54AM 11:34:56AM

THE WITNESS: No, I don't. 11:34:59AM

MR. BRIDGES: Please -- 11:34:59AM

BY MR. FEE: 11:34:59AM

Q Are you aware of any circumstances -- 11:34:59AM

MR. BRIDGES: I've just -- I've got to instruct the witness. Please listen carefully to his questions and answer his question. 11:34:59AM 11:34:59AM 11:35:00AM

THE WITNESS: Okay. 11:35:04AM

BY MR. FEE: 11:35:04AM

Q Are you aware of any of the circumstances that led to this home builder's inability to access 11:35:23AM 11:35:25AM

standards that he was governed by via incorporation by reference? 11:35:29AM 11:35:35AM

MR. BRIDGES: Objection, lacks foundation, assumes facts not in evidence, vague and ambiguous, argumentative. 11:35:38AM 11:35:38AM 11:35:39AM

THE WITNESS: No. 11:35:41AM

MR. BRIDGES: I'm sorry? 11:35:41AM

THE WITNESS: No. 11:35:41AM

BY MR. FEE: 11:35:41AM

Q Are you aware of any evidence that that home was actually not built due to this inability to access standards incorporated by reference? 11:35:48AM 11:35:49AM 11:35:53AM

MR. BRIDGES: Objection, completely lacks foundation, vague and ambiguous, argumentative. 11:35:57AM 11:35:58AM

THE WITNESS: No. 11:36:01AM

BY MR. FEE: 11:36:01AM

Q Have you been looking for somebody who you could identify as an example of a person who suffered as a result of inability to access a standard incorporated by reference? 11:36:36AM 11:36:39AM 11:36:44AM 11:36:47AM

MR. BRIDGES: Objection, argumentative, lacks foundation, argumentative -- or that's -- I guess I said that -- vague and ambiguous. 11:36:49AM 11:36:50AM 11:36:54AM

THE WITNESS: No. 11:36:58AM

BY MR. FEE: 11:36:58AM

registration for any of the plaintiffs' standards? 11:43:24AM

MR. BRIDGES: Lacks foundation, vague and ambiguous. 11:43:28AM 11:43:29AM

THE WITNESS: Yes. 11:43:30AM

BY MR. FEE: 11:43:30AM

Q Have you seen copyright registrations for all three of the plaintiffs' works? 11:43:31AM 11:43:34AM

MR. BRIDGES: Same objections. 11:43:36AM

THE WITNESS: I don't know. 11:43:39AM

BY MR. FEE: 11:43:39AM

Q Which plaintiffs do you recall seeing copyright registrations for? 11:43:40AM 11:43:42AM

MR. BRIDGES: Same objections. 11:43:44AM

THE WITNESS: I actually don't recall. 11:43:48AM

BY MR. FEE: 11:43:59AM

Q Are you aware of any evidence that any participants in the ASTM standard development process claimed to be the owner of the copyrights for any of the standards that ASTM claims to be infringed in this case? 11:44:03AM 11:44:06AM 11:44:10AM 11:44:13AM 11:44:17AM

MR. BRIDGES: Well, objection. Calls for a legal conclusion, may call for attorney-client communications, in which case I would instruct him not to answer. 11:44:19AM 11:44:20AM 11:44:29AM 11:44:33AM

THE WITNESS: I don't know. I'm sorry. 11:44:35AM

MR. BRIDGES: Please let me -- 11:44:36AM
THE WITNESS: I'm sorry. 11:44:38AM
MR. BRIDGES: -- finish my objections. 11:44:38AM
Assumes facts not in evidence and lacks foundation. 11:44:44AM
BY MR. FEE: 11:44:45AM
Q Are you aware of any evidence that any 11:44:45AM
participants in the NFPA standard development 11:44:47AM
process claim to be the owner of the copyright for 11:44:51AM
any NFPA standards? 11:44:55AM
MR. BRIDGES: All the same objections, and 11:44:58AM
I can't remember if I included argumentative. 11:44:59AM
THE WITNESS: I don't know. 11:45:02AM
BY MR. FEE: 11:45:02AM
Q You don't know if you're aware or you're 11:45:03AM
not aware of any? 11:45:04AM
A I -- I'm not aware of any. 11:45:06AM
Q Are you aware of any evidence that members 11:45:07AM
or participants in the ASHRAE standard development 11:45:11AM
process claimed to be owners of the copyrights that 11:45:15AM
are at issue and were registered by ASHRAE? 11:45:19AM
MR. BRIDGES: I'm -- I'm sorry. Can you 11:45:26AM
repeat that, please? 11:45:26AM
(The reporter read the record 11:45:41AM
as requested.) 9:21:04AM
MR. BRIDGES: Okay. Calls for a legal 11:45:41AM

conclusion, assumes facts not in evidence, argumentative, lacks foundation, vague and ambiguous. 11:45:43AM 11:45:45AM 11:45:47AM

THE WITNESS: I'm not aware of any. 11:45:48AM

MR. BRIDGES: And -- and one other, please, attorney-client privilege. I'm asking him not to testify as to -- attorney-client privileged and work product. Asking you not to testify as to anything you may know from counsel or subject to communication with counsel. 11:45:51AM 11:45:51AM 11:45:55AM 11:45:59AM 11:46:04AM 11:46:06AM

BY MR. FEE: 11:46:08AM

Q Are you aware of any evidence that any participants in the ASTM standard development process claimed to be the owners of the copyrights in the standards that they were involved in? 11:46:08AM 11:46:11AM 11:46:14AM 11:46:17AM

MR. BRIDGES: All the same objections. 11:46:22AM

THE WITNESS: Same answer; I'm not aware. 11:46:24AM

BY MR. BRIDGES: 11:46:25AM

Q You're not aware of any evidence along those lines? 11:46:26AM 11:46:28AM

MR. BRIDGES: All the same objections. 11:46:32AM

BY MR. FEE: 11:46:33AM

Q Correct? 11:46:34AM

A I -- I don't want to discuss 11:46:35AM

Q Do you deny saying that? 11:49:47AM
A I don't think I would ever use the phrase, 11:49:50AM
"strong copyright interests," sir. 11:49:50AM
Q No? 11:49:53AM
A That doesn't sound like me. 11:49:53AM
Q Okay. Who is Debra Hunt? 11:50:05AM
A I -- I don't recall. 11:50:18AM
Q I'm going to hand you what's been marked 11:50:32AM
as Exhibit 33. It's a series of e-mails between you 11:50:34AM
and Debra Hunt, Bates-labeled PRO_166616 through 18. 11:50:38AM
(Exhibit 33 marked for identification.) 11:50:51AM
THE WITNESS: Yeah, this appears to be an 11:51:29AM
exchange between me and -- and Ms. Hunt. 11:51:31AM
BY MR. FEE: 11:51:32AM
Q Have you had a chance to read this e-mail 11:51:35AM
enough to see that you referred to the standards 11:51:37AM
having a strong copyright interest? 11:51:40AM
A I do indeed. 11:51:42AM
Q Okay. Does that refresh your recollection 11:51:43AM
about whether or not you've referred to the 11:51:44AM
standards as having strong copyright interests in 11:51:47AM
the past? 11:51:51AM
MR. BRIDGES: Objection, may call for a 11:51:52AM
legal conclusion and vague and ambiguous. 11:51:54AM
THE WITNESS: And I think you've pulled 11:51:58AM

standards? 12:00:36PM

A I don't recall. 12:00:44PM

Q I want to draw your attention to the first page you see at the top it says -- on March 12, 2012 at 12:41 p.m., Seamus Kraft wrote -- and it says, "can you give me a few more details on what is going to happen?" 12:00:47PM 12:00:50PM 12:00:58PM 12:01:01PM 12:01:05PM

Do you see that? 12:01:06PM

A Uh-huh. Yes. 12:01:06PM

Q And then below there is one, two, three, four, five -- six paragraphs and a numbered list of three items. Do you see that? 12:01:07PM 12:01:09PM 12:01:15PM

A Yes, I do. 12:01:18PM

Q And then your name is below that, correct? 12:01:19PM

A Yes. 12:01:24PM

Q And isn't it correct that you wrote those paragraphs that list the three items and your name there? 12:01:25PM 12:01:28PM 12:01:32PM

A Yes. 12:01:34PM

Q I want to turn your attention to the second paragraph on this, the one that starts with sure. Do you see that? 12:01:36PM 12:01:38PM 12:01:40PM

A Uh-huh. Yes. 12:01:42PM

Q So the third sentence says all of these standards are heavily copyright protected. 12:01:42PM 12:01:47PM

Do you see that? 12:01:50PM
MR. BRIDGES: Objection, misstates the 12:01:51PM
document and -- yeah, misstates -- misdescribes the 12:01:52PM
document. 12:01:58PM
THE WITNESS: I see that sentence in that 12:02:00PM
paragraph, yes. 12:02:02PM
BY MR. FEE: 12:02:02PM
Q Okay. And you wrote that, correct? 12:02:03PM
A Yes, I did. 12:02:05PM
Q And you were referencing the 73 standards, 12:02:06PM
correct? 12:02:15PM
A Yes, sir. 12:02:16PM
Q What did you mean when you said that all 12:02:16PM
of the 73 standards are heavily copyright protected? 12:02:18PM
MR. BRIDGES: Objection to the extent it 12:02:23PM
calls for a legal conclusion, vague and ambiguous. 12:02:24PM
THE WITNESS: I meant that the standards 12:02:27PM
bodies were very aggressive in claiming copyright 12:02:29PM
on those documents. 12:02:33PM
BY MR. FEE: 12:02:34PM
Q So you understood that they were copyright 12:02:34PM
protected? 12:02:37PM
MR. BRIDGES: Objection. That calls for a 12:02:38PM
legal conclusion. 12:02:40PM
THE WITNESS: That's not what I said. I 12:02:42PM

Q So it's your understanding that the NFPA web -- NFPA website has evidence of federal government employees attempting to assign whatever copyrights they have to NFPA? 12:09:24PM 12:09:27PM 12:09:31PM 12:09:34PM

MR. BRIDGES: All the same objections as to the earlier line of questions and same instruction. 12:09:37PM 12:09:38PM 12:09:43PM

THE WITNESS: Yes. 12:09:43PM

BY MR. FEE: 12:09:43PM

Q Did you see similar information with respect to the other plaintiffs in this case? 12:09:45PM 12:09:46PM

MR. BRIDGES: All the same objections, plus lacks foundation, vague and ambiguous. 12:09:49PM 12:09:50PM

THE WITNESS: I actually don't recall. 12:09:53PM

BY MR. FEE: 12:09:54PM

Q Aside from federal government employees, are you aware of any other evidence that participants in the standard development for any of the plaintiffs failed to properly transfer their copyright interests to the plaintiffs in this case? 12:09:57PM 12:09:58PM 12:10:02PM 12:10:05PM 12:10:09PM

MR. BRIDGES: All the same objections. 12:10:11PM

THE WITNESS: That's totally beyond my expertise. I -- I can't answer that question. 12:10:15PM 12:10:17PM

BY MR. FEE: 12:10:19PM

Q Does Public Resource claim to be the owner 12:10:26PM

of any copyrighted interest in any of the standards at issue in this case? 12:10:29PM 12:10:32PM

MR. BRIDGES: Objection, calls for a legal conclusion. 12:10:34PM 12:10:35PM

THE WITNESS: No. 12:10:36PM

BY MR. FEE: 12:10:37PM

Q Do you personally claim to be the owner of any copyright interest for any of the standards at issue in this case? 12:10:37PM 12:10:39PM 12:10:43PM

MR. BRIDGES: Same objections. 12:10:44PM

THE WITNESS: No. 12:10:46PM

BY MR. FEE: 12:10:46PM

Q Do you acknowledge that the writing of plaintiffs' standards requires some sort of creativity to actually put words on paper? 12:11:06PM 12:11:09PM 12:11:13PM

MR. BRIDGES: Objection to the extent it calls for a legal conclusion, assumes many facts not in evidence, lacks foundation, competence, calls for speculation and vague and ambiguous. 12:11:17PM 12:11:19PM 12:11:23PM 12:11:25PM

THE WITNESS: I'm not qualified to answer that question, sir. 12:11:35PM 12:11:36PM

BY MR. FEE: 12:11:36PM

Q Are you aware of any evidence that would suggest that any of the standards at issue in this 12:11:36PM 12:11:38PM

THE WITNESS: A specific incorporation by reference for PHMSA, of the Pipeline and Hazardous Materials Safety Administration is actually Section 192.7 of that section of the CFR. 1:08:27PM 1:08:30PM 1:08:32PM 1:08:37PM

BY MR. FEE: 1:08:41PM

Q Okay. 1:08:41PM

MR. FEE: What are we on? 1:09:02PM

THE REPORTER: Now we're on 38. 1:09:05PM

(Exhibit 38 marked for identification.) 1:09:06PM

BY MR. FEE: 1:09:07PM

Q I'm going to hand you what's been marked as Exhibit 38. It's entitled, "Public Safety Standards, United States Federal Government," PRO_166182 through 166257. 1:09:07PM 1:09:10PM 1:09:12PM 1:09:12PM

MR. BRIDGES: Do you have any further questions on Exhibit 37 or -- 1:09:29PM 1:09:30PM

MR. FEE: We're going to be going back to that. 1:09:37PM 1:09:41PM

BY MR. FEE: 1:09:41PM

Q Mr. Malamud, do you recognize what Exhibit 38 is? 1:09:41PM 1:09:46PM

A It appears to be our U.S. manifest for the Code of Federal Regulations. 1:09:47PM 1:09:50PM

Q Can you identify a place in Exhibit 38 where you identify any standard -- or identified 1:09:54PM 1:09:57PM

of the specific standard. Those are the two criteria we use. 1:21:50PM 1:21:53PM

THE REPORTER: 40. 1:22:12PM

(Exhibit 40 marked for identification.) 11:31:26AM

BY MR. FEE: 1:22:13PM

Q I'm going to hand you what's been marked as Exhibit 40. It's a -- entitled, "Public Safety Codes Incorporated by Law," PRO_166258 through -267. 1:22:14PM 1:22:15PM 1:22:18PM

Mr. Malamud, is Exhibit 40 essentially the state version of Exhibit 38 that you were testifying about earlier? 1:22:53PM 1:22:55PM 1:22:57PM

MR. BRIDGES: Objection, vague and ambiguous. 1:22:58PM 1:22:59PM

THE WITNESS: This appears to be an older version of our -- there's no date on this. When was this screen dump taken? 1:23:03PM 1:23:04PM 1:23:13PM

BY MR. FEE: 1:23:16PM

Q Your -- you produced this document. Do you see the Bates label? 1:23:16PM 1:23:17PM

A Okay. Yeah, this -- this says, "Public Safety Codes Incorporated by Law" and by States and -- and one city. 1:23:20PM 1:23:22PM 1:23:27PM

Q Do you believe Exhibit 40 to be an old version of this document? 1:23:29PM 1:23:31PM

MR. BRIDGES: Objection, vague and 1:23:33PM

of the standards that were posted on Public Resource's website as a result of an incorporation by reference by a nonfederal government entity? 1:27:37PM 1:27:39PM 1:27:42PM

A I think so. 1:27:49PM

MR. FEE: We've been going about an hour again. Do you want to take a lunch break now? 1:28:58PM 1:29:00PM

MR. BRIDGES: If you want. 1:29:02PM

MR. FEE: Why don't we do that. 1:29:04PM

THE VIDEOGRAPHER: We're going off the record. The time is 1:29 p.m. 1:29:05PM 1:29:06PM

(Lunch recess taken.) 10:27:40AM

THE VIDEOGRAPHER: We're back on the record. The time is 2:26 p.m. 2:25:54PM 2:25:55PM

BY MR. FEE: 2:25:58PM

Q Mr. Malamud, before lunch we spoke a little bit about the process that you went through in purchasing and making copies of the 73 standards. I -- I want to talk to you now about the process you used to make electronic copies of some of the standards going forward. 2:25:59PM 2:26:02PM 2:26:05PM 2:26:09PM 2:26:12PM 2:26:16PM

Can you describe briefly what process you go through to post the standards at issue on your website? 2:26:19PM 2:26:21PM 2:26:26PM

A Step one is to determine whether a standard has been explicitly incorporated by 2:26:31PM 2:26:33PM

reference. Step two is to get a copy of the standard and scan it. Step three is to append a cover sheet. And then Step four is to transfer it onto the htdocs segment of our web server, which is where documents live. 2:26:38PM 2:26:43PM 2:26:55PM 2:27:01PM 2:27:05PM

Q And once the document is on your htdocs web server, is it generally accessible to the public? 2:27:11PM 2:27:14PM 2:27:25PM

A Yes. 2:27:25PM

Q Now, for the standards that are posted on your website, did you always purchase paper copies of those standards and then scan them, or did you buy electronic copies at times? 2:27:25PM 2:27:29PM 2:27:32PM 2:27:36PM

A For the standards at issue they're all paper copies. 2:27:39PM 2:27:43PM

Q Did you purchase any of the paper copies of the standards at issue directly from one of the plaintiffs? 2:27:45PM 2:27:47PM 2:27:50PM

MR. BRIDGES: Objection, asked and answered. 2:27:51PM 2:27:51PM

THE WITNESS: We -- we already went over that, I believe, on NFPA and ASTM for -- 2:27:52PM 2:27:53PM

BY MR. FEE: 2:27:57PM

Q And that was with respect to standards that are on the Public Resource website? You did 2:27:58PM 2:28:01PM

purchase directly from NFPA and ASTM? 2:28:05PM
MR. BRIDGES: Same objection. 2:28:13PM
THE WITNESS: Yes. 2:28:13PM
BY MR. FEE: 2:28:14PM
Q And, to the best of your recollection, you never purchased electronic copies of any of the standards at issue; is that right? 2:28:14PM 2:28:16PM 2:28:19PM
A That is correct. 2:28:23PM
Q Now, how did you determine whether or -- strike that. 2:28:23PM 2:28:34PM
Once you obtained a paper copy of the standard, who scanned that paper copy? 2:28:41PM 2:28:44PM
A I did. 2:28:48PM
Q And that's true for all the standards at issue in this case? 2:28:49PM 2:28:55PM
A Yes. 2:28:56PM
Q In what file format was the output from your scan? 2:28:56PM 2:29:00PM
MR. BRIDGES: Objection, vague, ambiguous. 2:29:03PM
THE WITNESS: PDF. 2:29:06PM
BY MR. FEE: 2:29:07PM
Q Did you post a PDF copy of every of the standards at issue in this case on the Public Resource website? 2:29:14PM 2:29:18PM 2:29:21PM
MR. BRIDGES: Objection, vague and 2:29:23PM

ambiguous. 2:29:24PM

THE WITNESS: Each of the standards at issue were posted on our website. 2:29:28PM 2:29:29PM

BY MR. FEE: 2:29:32PM

Q In PDF format? 2:29:33PM

A In PDF format. 2:29:34PM

Q Now, is it true that you also posted at least a subset of the standards at issue in a file format other than PDF? 2:29:36PM 2:29:39PM 2:29:42PM

A Yes. 2:29:43PM

Q How did you go about taking the PDF file format and wind up with some other file format? 2:29:48PM 2:29:52PM

A Sent it to our contractor, HTC, which double-keyed the standards into HTML. 2:29:55PM 2:30:01PM

THE WITNESS: We're going to be doing a lots of acronyms, so let me know. 2:30:11PM 2:30:12PM

THE REPORTER: Okay. Slow it down. 2:30:13PM

BY MR. FEE: 2:30:16PM

Q Are there any other steps that were implemented to take the PDF file format and arrive at some other file format that was posted on the Public Resource website? 2:30:21PM 2:30:23PM 2:30:27PM 2:30:29PM

MR. BRIDGES: Objection, vague and ambiguous. 2:30:31PM 2:30:31PM

THE WITNESS: Well, the second step of the 2:30:33PM

workflow is the double-key operation, um, and that's the conversion into an HTML file with JPG images, J -- J-P-G. 2:30:35PM 2:30:36PM 2:30:39PM

BY MR. FEE: 2:30:42PM

Q Who did the conversion of the HTM -- HTML file into JPG? 2:31:00PM 2:31:03PM

A HTC did. 2:31:07PM

THE REPORTER: HTC? 2:31:09PM

THE WITNESS: HTC. 2:31:09PM

BY MR. FEE: 2:31:09PM

Q What would happen after the file was converted into a JPG format and before it was posted on the Public Resource website? 2:31:16PM 2:31:19PM 2:31:22PM

A I'm not sure I understand that question. 2:31:29PM

Q Okay. Right. Isn't it the case that at least with some of the standards at issue you posted file formats that included SVG and/or MathML elements? 2:31:34PM 2:31:37PM 2:31:40PM 2:31:43PM

A That would be the third step of the workflow after the HTML JPG step. 2:31:46PM 2:31:48PM

Q Okay. That's what I was trying to get at. 2:31:53PM

Who did that work? 2:31:54PM

A Point.B Studio. 2:31:55PM

Q And Point.B Studio is run by your wife, Rebecca Malamud, correct? 2:32:03PM 2:32:07PM

understanding, yes.
BY MR. FEE:
Q Do you have any more detailed knowledge regarding the process used that were used by your contractors other than what you've already described to me?
MR. BRIDGES: Objection, argumentative, vague and ambiguous.
THE WITNESS: Yeah, I have a vague and overall understanding of the process they went through.
BY MR. FEE:
Q Okay. Well, let's start with HTC, then. First of all, I want to make sure I understand. You delivered to HTC PDFs of the standards at issue in this case, correct?
A That's correct.
Q After HTC received the PDF files, what is your understanding as to the next step that was done by HTC Global?
A The next --
MR. BRIDGES: Objection, vague and ambiguous.
Sorry.
THE WITNESS: Next step is to take each of

the images inside of the document and save them as a separate JPG file with a very specific file-naming convention which I gave them. 2:34:17PM 2:34:21PM 2:34:25PM

BY MR. FEE: 2:34:27PM

Q What happens next at HTC, to the best of your knowledge? 2:34:29PM 2:34:32PM

A They then go through the double-key process with the text. 2:34:33PM 2:34:35PM

Q What is the double-key process? 2:34:40PM

A In the double-key process, two individuals or two teams of individuals independently type in the document and then the two versions are compared to find any errors. 2:34:41PM 2:34:45PM 2:34:50PM 2:34:55PM

Q Is it your understanding as of today that HTC Global engaged in a double-key process for the standards at issue? 2:35:13PM 2:35:15PM 2:35:19PM

A Yes. 2:35:23PM

Q You don't believe that HTC was using OCR software to deliver the HTML that was provided to you? 2:35:40PM 2:35:46PM 2:35:52PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous, argumentative. 2:35:52PM 2:35:53PM

THE WITNESS: I -- I don't believe they were. 2:35:56PM 2:35:57PM

BY MR. FEE: 2:35:59PM

BY MR. FEE: 2:37:26PM

Q Did you consider using a triple-key process with HTC Global? 2:37:27PM 2:37:29PM

MR. BRIDGES: Objection, vague and ambiguous. 2:37:32PM 2:37:33PM

THE WITNESS: I asked HTC for a quote for triple-key. 2:37:34PM 2:37:37PM

BY MR. FEE: 2:37:38PM

Q Did HTC provide a quote for triple-key? 2:37:39PM

A They did. 2:37:44PM

Q I'm going to hand you -- I'm going to hand you what's previously been marked as Exhibit 2. It's an e-mail to you from Hemant Talwalkar, Bates-label PRO_4964. 2:37:47PM 2:37:54PM 2:37:58PM 2:38:01PM

MR. BRIDGES: I'm sorry. Can you read back his statement? 2:38:29PM 2:38:29PM

(The reporter read the record as requested.) 2:38:30PM 2:38:30PM

MR. BRIDGES: I'm sorry.

THE REPORTER: Sure.

BY MR. FEE: 2:38:31PM

Q First of all, do you recognize Exhibit 2 as an e-mail between you and Hemant Talwalkar? 2:38:31PM 2:38:32PM

A It appears to be a message from Hemant to me. 2:38:40PM 2:38:42PM

Q Is this the price quote that you were referencing? 2:38:43PM 2:38:45PM

A It is, yes. 2:38:49PM

Q In the chart that has the price quote, do you see that there's a column there that says, "accuracy"? 2:38:50PM 2:38:53PM 2:38:56PM

A Yes. 2:38:59PM

Q And for double-key compare, it has an accuracy of 99.51 percent. Do you see that? 2:39:00PM 2:39:05PM

A I do. 2:39:11PM

MR. BRIDGES: Objection. 2:39:11PM

THE WITNESS: I'm sorry. 2:39:13PM

BY MR. FEE: 2:39:16PM

Q Do you have an understanding as to what that means? 2:39:17PM 2:39:18PM

MR. BRIDGES: Objection, lack of competence, may call for speculation, vague and ambiguous. 2:39:21PM 2:39:24PM 2:39:26PM

THE WITNESS: That is the error tolerance for the double-key versus the triple-key process. 2:39:28PM 2:39:30PM

BY MR. FEE: 2:39:38PM

Q Is it your understanding that the e-mail from -- Mr. Talwalkar, first of all, he's from HTC Global, right? 2:39:38PM 2:39:43PM 2:39:45PM

A Yes. 2:39:47PM

Q Okay. So does his e-mail to you indicating the double-key compare has an accuracy of 99.51 percent mean that there are up to 0.49 percent inaccurate results from double-keying? 2:39:47PM 2:39:51PM 2:39:54PM 2:40:02PM

MR. BRIDGES: Objection, lacks foundation, assumes facts not in evidence, argumentative, vague and ambiguous. 2:40:05PM 2:40:06PM 2:40:09PM

THE WITNESS: It's -- it's the error tolerance, are -- there are no more than that many errors. 2:40:11PM 2:40:13PM 2:40:16PM

BY MR. FEE: 2:40:17PM

Q You understood that double-key compare would lead to some inaccuracies, right? 2:40:17PM 2:40:20PM

MR. BRIDGES: Objection, lacks foundation. 2:40:24PM

THE WITNESS: Not necessarily. It depends on the subject matter of -- of the source material. 2:40:25PM 2:40:27PM

BY MR. FEE: 2:40:29PM

Q Did you have any reason to believe that the standards at issue if double-keyed would lead to 100 percent accuracy? 2:40:30PM 2:40:31PM 2:40:34PM

MR. BRIDGES: Objection, argumentative, lacks foundation, vague and ambiguous. 2:40:37PM 2:40:38PM

THE WITNESS: I -- I believe that -- that there would be a -- a maximum error tolerance of -- of 99.51 minus 100. 2:40:45PM 2:40:45PM 2:40:57PM

BY MR. FEE: 2:41:01PM

Q Was it your understanding that this error tolerance -- or strike that -- accuracy, I should say, rate was based upon a sampling of the materials that you were asking HTC Global to double-key? 2:41:02PM 2:41:02PM 2:41:04PM 2:41:08PM

MR. BRIDGES: Objection, lacks foundation, assumes facts not in evidence, argumentative, vague and ambiguous. 2:41:13PM 2:41:14PM 2:41:20PM

THE WITNESS: 99.51 percent is, I believe, the industry standard for a double-key compare. 2:41:23PM 2:41:25PM

BY MR. FEE: 2:41:29PM

Q And HTC Global also provided you with a -- a price quote for triple-key compare, correct? 2:41:33PM 2:41:36PM

A That's correct. 2:41:41PM

Q And the accuracy rate for triple-key compare is greater than the double-key compare, right? 2:41:42PM 2:41:49PM 2:41:52PM

MR. BRIDGES: Objection, hypotheticals, lacks foundation, assumes facts not in evidence, argumentative, vague and ambiguous. 2:41:53PM 2:41:54PM 2:41:55PM

THE WITNESS: The maximum error tolerance is less for triple-key than it is for double-key. 2:41:57PM 2:42:00PM

BY MR. FEE: 2:42:04PM

Q And triple-keying is more expensive than double-keying, correct? 2:42:05PM 2:42:07PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 2:42:09PM

THE WITNESS: On this quote it is. 2:42:11PM

BY MR. FEE: 2:42:15PM

Q And is it correct that after receiving this quote, Public Resource elected to use double-key compare instead of triple-key compare? 2:42:16PM

A Yes. 2:42:30PM

Q Why did it make that decision? 2:42:31PM

A Again, based on my research on standard industry practices, double-key is what's used in the legal industry. 2:42:36PM

Q You understood that double-keying would be less accurate than triple-keying in this circumstance, right? 2:42:49PM

MR. BRIDGES: Objection, misstates testimony, lacks foundation, argumentative and assumes facts not in evidence. 2:42:57PM

THE WITNESS: Again, I think you misstated. It's the maximum error tolerance is less on triple-key than on double-key. 2:43:05PM

BY MR. FEE: 2:43:13PM

Q Is it true that Public Resource was willing to live with a higher error tolerance in 2:43:15PM

order to save money on HTC Global's services? 2:43:21PM
MR. BRIDGES: Objection, lacks foundation, 2:43:24PM
argumentative, vague and ambiguous. 2:43:25PM
THE WITNESS: Double-key seemed to be 2:43:31PM
perfectly appropriate for the task at hand. 2:43:33PM
BY MR. FEE: 2:43:37PM
Q So public Resource was willing to accept 2:43:37PM
the higher error tolerance associated with 2:43:40PM
double-keying -- 2:43:43PM
MR. BRIDGES: Objection -- 2:43:44PM
BY MR. FEE: 2:43:44PM
Q -- right? 2:43:44PM
MR. BRIDGES: Objection, misstates 2:43:44PM
testimony, lacks foundation, vague and ambiguous 2:43:45PM
and argumentative. 2:43:47PM
THE WITNESS: It's potentially higher 2:43:48PM
error tolerance under the double-key method. 2:43:48PM
BY MR. FEE: 2:43:52PM
Q Well, your supplier told you that it was 2:43:53PM
going to be a higher error tolerance, right? 2:43:54PM
MR. BRIDGES: Objection, lacks foundation, 2:43:57PM
vague and ambiguous. 2:43:58PM
THE WITNESS: Again, it depends on the 2:44:00PM
nature of the source material. But, yes, the -- 2:44:01PM
the -- the error tolerance of double-key is, in 2:44:02PM

fact, 99.51 percent, which is what HTC quoted. 2:44:06PM
BY MR. FEE: 2:44:13PM
Q At any point in time did you suggest to 2:44:30PM
any person working with Public Resource that HTC may 2:44:35PM
not be double-keying the standards that you had 2:44:39PM
provided to it? 2:44:42PM
MR. BRIDGES: Objection, lacks foundation, 2:44:45PM
vague and ambiguous. 2:44:47PM
THE WITNESS: I don't recall. 2:44:50PM
BY MR. FEE: 2:44:52PM
Q Have you ever suggested to Rebecca Malamud 2:45:35PM
that HTC Global may have been cheating and doing OCR 2:45:38PM
in connection with some of the work it was doing for 2:45:43PM
Public Resource? 2:45:46PM
MR. BRIDGES: Objection, vague and 2:45:47PM
ambiguous. 2:45:47PM
THE WITNESS: No, I don't recall. If you 2:45:48PM
have a specific message, I'd be very happy to look 2:45:48PM
at it. 2:45:52PM
BY MR. FEE: 2:45:52PM
Q I'm going to hand you what's been marked 2:45:53PM
as Exhibit 21. It's a e-mail chain between 2:45:54PM
Mr. Malamud and Mrs. Malamud, Bates-labeled 2:45:58PM
PRO_42289 through -91. 2:46:02PM
THE REPORTER: Kevin, you said that was 2:46:21PM

previously marked, right -- 2:46:23PM
MR. FEE: Yes. 2:46:25PM
THE REPORTER: -- as 21? Thanks. 2:46:26PM
THE WITNESS: This seems like e-mail between me and Rebecca. 2:46:48PM
BY MR. FEE: 2:46:50PM
Q I want to draw your attention to the fourth paragraph of this e-mail chain, fourth from the top of the first page. First of all, that portion of the e-mail is a e-mail written by you to Ms. Malamud, correct? 2:46:55PM
A That's correct. 2:46:56PM
Q And do you see the fourth paragraph it says, "All the docs you see are in theory double-keyed. Of course, they may cheat and do OCR first and then do their QA." 2:47:00PM
Do you recall having that communication with Ms. Malamud? 2:47:04PM
A Yes. I just told you that this appears to be e-mail between me and Rebecca. 2:47:06PM
Q Did you have reason to believe that HTC Global may have been -- may have been cheating and not double-keying the work they were doing for you? 2:47:10PM
A No. 2:47:10PM
Q Why did you say that, then? 2:47:13PM
2:47:15PM
2:47:21PM
2:47:23PM
2:47:26PM
2:47:28PM
2:47:31PM
2:47:34PM
2:47:36PM
2:47:40PM
2:47:42PM
2:47:44PM

Q My math is wrong. You can go ahead and say it. 3:02:20PM 3:02:22PM

It's about 175,000 kilo-characters? 3:02:23PM

A $350,000 -- 3:02:27PM

MR. BRIDGES: The math will speak for itself. 3:02:28PM 3:02:29PM

THE WITNESS: Yeah, it's 700,000 kilo-characters, right? 3:02:31PM 3:02:34PM

BY MR. FEE: 3:02:35PM

Q Oh, you're right. It's double. I'm not doing math today. 3:02:36PM 3:02:36PM

Do you know how many page -- kilo-characters there are on an average page in a standard? 3:02:39PM 3:02:41PM 3:02:43PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 3:02:47PM 3:02:47PM

THE WITNESS: I knew that at one point. It's not on -- off the top of my head. 3:02:49PM 3:02:50PM

BY MR. FEE: 3:02:52PM

Q So, Mr. Malamud, we were talking about the process by which you took paper versions and they wound up being posted on your website. And we've now talked a lot about the double-keying that was done by HTC Global. After you received the results or the end work from HTC Global, what happened next 3:05:23PM 3:05:24PM 3:05:28PM 3:05:33PM 3:05:36PM 3:05:40PM

in the process at Public Resource? 3:05:44PM

A Performed quality assurance, validated the HTML, made sure that all the JPG images were there, so did a link validity check, and then pushed them to our web server. 3:05:49PM 3:05:55PM 3:06:00PM 3:06:09PM

Q And that would complete the process with respect to standards that are posted in HTML format, right? 3:06:13PM 3:06:15PM 3:06:18PM

A That's a good high-level overview of the work flow, yes. 3:06:19PM 3:06:22PM

Q Now, you had also mentioned that there were some standards for which Point.B Studios did some additional work; is that right? 3:06:23PM 3:06:25PM 3:06:31PM

A That's correct. 3:06:32PM

Q Okay. First of all, how would you go about identifying which standards you would had ask Point.B Studios to do work on? 3:06:32PM 3:06:35PM 3:06:38PM

A Based on my personal judgment of what were -- were compelling standards that deserved that next level of the workflow, given our limited budget. 3:06:42PM 3:06:44PM 3:06:47PM 3:06:50PM

Q Once you identified an appropriate standard for Point.B Studios to work upon, what happened next? 3:06:51PM 3:06:53PM 3:06:57PM

A The job was very specific: take the HTML 3:06:59PM

file and the JPG images, convert the JPG images exactly into SVG -- SVG, silicon vector graphics or whatever that is -- and MathML, which is a language for typesetting mathematical formulas. 3:07:02PM 3:07:06PM 3:07:09PM 3:07:20PM

Q Prior to the first time you retained Point.B Studios to do this work on converting JPG images, what experience or expertise were you aware of that Point.B Studios had with respect to that type of activity? 3:07:33PM 3:07:39PM 3:07:41PM 3:07:46PM 3:07:49PM

A Rebecca Malamud is a expert on SVG graphic design, use of graphic processing tools. 3:07:56PM 3:08:00PM

Q Had -- to the best of your knowledge, had Point.B Studios ever done a project similar to what you had asked Point.B Studios to do for Public Resource? 3:08:05PM 3:08:12PM 3:08:15PM 3:08:18PM

MR. BRIDGES: Objection, competence, vague and ambiguous. 3:08:19PM 3:08:22PM

THE WITNESS: I know they had worked extensively with SVG and with the -- the tools used to process SVG. 3:08:26PM 3:08:27PM 3:08:31PM

BY MR. FEE: 3:08:33PM

Q Would that include taking JPG file formats and converting them into SVG file formats? 3:08:34PM 3:08:39PM

MR. BRIDGES: Same objections. 3:08:44PM

THE WITNESS: I'm not aware of anyone 3:08:44PM

speculation.
THE WITNESS: No, I don't.
BY MR. FEE:
Q Do you know if children did that work?
MR. BRIDGES: Objection, argumentative, lacks foundation.
THE WITNESS: I know Rebecca ran a mentoring program teaching people graphic design skills.
MR. BRIDGES: Please answer his question.
THE WITNESS: Okay. I'm sorry. Please repeat the question.
BY MR. FEE:
Q My question is if you were aware of whether or not children were doing the conversion from JPG to MathML or SVG.
MR. BRIDGES: Objection, argumentative, lacks foundation, vague and ambiguous.
THE WITNESS: Children. I'm sorry. Is -- do you have a particular age limit in mind or --
BY MR. FEE:
Q Why don't we start with under 18.
A Yes, I believe some students were involved.
Q Do you know which students were involved?

A No. 3:11:58PM
Q Was -- were these students involved 3:11:58PM
through something called Rural Design Collection 3:12:02PM
(sic)? 3:12:03PM
A That's correct. 3:12:06PM
Q And are you aware of whether or not Rural 3:12:07PM
Design Collective says that its target group is 3:12:11PM
children ages 7 to 14? 3:12:16PM
A If that's what it says on their website. 3:12:20PM
I -- I just don't recall. 3:12:23PM
Q Would it be your expectation that there 3:12:27PM
are children ages 7 to 14 doing the conversion of 3:12:29PM
the JPG file format images to MathML and SVG on -- 3:12:33PM
for Public Resource? 3:12:40PM
MR. BRIDGES: Objection, lacks foundation, 3:12:44PM
vague and ambiguous. 3:12:45PM
THE WITNESS: I would be speculating, but 3:12:46PM
that sounds awfully advanced for a 7-year-old. 3:12:48PM
BY MR. FEE: 3:12:52PM
Q Do you have any understanding as to the 3:12:53PM
age range of the kids who are working on a 3:12:54PM
conversion process for Point.B Studios' project for 3:12:58PM
Public Resource? 3:13:02PM
MR. BRIDGES: Objection, lacks foundation, 3:13:04PM
may call for speculation, vague and ambiguous, 3:13:04PM

argumentative.

THE WITNESS: My sole point of contact was Rebecca, and the job was very simple: JPG in, SVG and MathML back out. And that was my concern.

BY MR. FEE:

Q Did you at least understand that a group of students from RDC, Rural Design Collective, were doing the converting of the formulas and graphics on the standards that you asked them to work on? Strike that.

Do you at least understand that a group of students from Rural Design Collective were doing the conversion of formulas and graphics for the standards work that you had asked Point.B Studios to do for Public Resource?

MR. BRIDGES: Objection, lacks foundation, argumentative, vague and ambiguous.

THE WITNESS: They did a lot more than standards, the California Code of Regulations, for example, the graphics images in there which are not standards.

BY MR. FEE:

Q But you understood that children at Rural Design Collective were working on the conversion of

the standards that you posted on your website? 3:14:37PM
MR. BRIDGES: Same objections. 3:14:41PM
THE WITNESS: I know that students were working on a conversion of JPG images into SVG and MathML. I don't know which specific items anybody worked on. 3:14:42PM 3:14:46PM 3:14:51PM 3:14:55PM
BY MR. FEE: 3:14:56PM
Q And you know that those kids were working on that -- a conversion for work that was requested by Public Resource? 3:14:56PM 3:14:58PM 3:15:00PM
MR. BRIDGES: Same objections. 3:15:03PM
THE WITNESS: Yes. 3:15:07PM
BY MR. FEE: 3:15:08PM
Q Were those kids paid? 3:15:11PM
MR. BRIDGES: Objection, competence, may call for speculation. 3:15:14PM 3:15:16PM
THE WITNESS: I really don't know. 3:15:18PM
BY MR. FEE: 3:15:27PM
Q Did Public Resource provide any funds to Point.B Studios for this student program? 3:15:27PM 3:15:31PM
MR. BRIDGES: Objection, lacks foundation, argumentative, vague and ambiguous. 3:15:36PM 3:15:37PM
THE WITNESS: Yes. Several summers in a row I added extra money to the monthly fee that we paid to Point.B with the understanding that it 3:15:41PM 3:15:43PM 3:15:46PM

optimized for viewing on the web in multiple platforms, all right, so there's a -- and then the third item is an SVG source directory, which included the core work files in MathML and the fully editable SVG graphics. 3:18:42PM 3:18:47PM 3:18:49PM 3:18:54PM 3:19:00PM

Q What would you do with all those files? 3:19:04PM

MR. BRIDGES: Objection, vague and ambiguous. 3:19:10PM 3:19:11PM

THE WITNESS: A series of quality assurance checks, link validity, HTML validity, a comparison of at least some of the JPGs to the SVGs, a quality assurance step. 3:19:11PM 3:19:12PM 3:19:18PM 3:19:23PM

BY MR. FEE: 3:19:27PM

Q Did anything else happen after that and before the files were posted to the web? 3:19:28PM 3:19:30PM

MR. BRIDGES: Objection, vague and ambiguous. 3:19:33PM 3:19:34PM

THE WITNESS: Once I was satisfied that the work was properly done, then we posted it online. 3:19:36PM 3:19:37PM 3:19:40PM

BY MR. FEE: 3:19:42PM

Q Now, for all the files that you posted online, where did you post these files? 3:19:43PM 3:19:45PM

A On -- 3:19:51PM

MR. BRIDGES: Objection, lacks foundation 3:19:52PM

and vague and ambiguous. 3:19:53PM
THE WITNESS: On Law.Resource.Org. 3:19:56PM
BY MR. FEE: 3:19:59PM
Q Did you also post some version of 3:20:01PM
plaintiffs' standards on Internet Archive at or 3:20:06PM
around the same time as you posted them on the 3:20:10PM
Public Resource website? 3:20:12PM
MR. BRIDGES: Objection, argumentative, 3:20:15PM
lacks foundation, vague and ambiguous. 3:20:17PM
THE WITNESS: Are we still talking about 3:20:19PM
SVG and HTML files? 3:20:20PM
BY MR. FEE: 3:20:23PM
Q No. I'm asking a more general question 3:20:23PM
now. I -- maybe I should take a step back. 3:20:25PM
Have you completed the story as to how the 3:20:27PM
files received from Point.B Studios go from Point.B 3:20:30PM
Studios to Public Resource to being posted for the 3:20:33PM
public to view on the web. 3:20:38PM
MR. BRIDGES: Objection, calling for a 3:20:40PM
narrative, vague and ambiguous, argumentative, 3:20:40PM
lacks foundation. 3:20:43PM
THE WITNESS: That was a high-level 3:20:44PM
overview of the workflow. 3:20:45PM
BY MR. FEE: 3:20:46PM
Q So at or around the time that any of the 3:20:47PM

standards, either in PDF form or HTML with SVG or MathML, are posted on a Public Resource website, would Public Resource also post some version of that standard on the Internet Archive? 3:20:52PM 3:20:56PM 3:20:59PM 3:21:03PM

MR. BRIDGES: Objection, hypothetical, lacks foundation, vague and ambiguous. 3:21:06PM 3:21:07PM

THE WITNESS: Some of the PDF documents were added to my Internet Archive collection. 3:21:10PM 3:21:13PM

BY MR. FEE: 3:21:19PM

Q How do you decide which of the PDF documents containing standards were on your Internet Archive collection? 3:21:24PM 3:21:27PM 3:21:30PM

MR. BRIDGES: Objection, vague and ambiguous. 3:21:34PM 3:21:34PM

THE WITNESS: I tried to get most of the ones that were PDF files that were standards incorporated by reference into that -- that collection. 3:21:35PM 3:21:37PM 3:21:40PM 3:21:42PM

BY MR. FEE: 3:21:42PM

Q Why did you only post PDF versions of the standards to the Internet Archive? 3:21:43PM 3:21:47PM

MR. BRIDGES: Objection, argumentative, lacks foundation. 3:21:49PM 3:21:50PM

THE WITNESS: The Internet Archive doesn't have an HTML viewing capability. 3:21:51PM 3:21:53PM

(Recess taken.) 10:27:40AM

THE VIDEOGRAPHER: We're back on the record. The time is 3:48 p.m. This marks the beginning of Disc No. 3 in the deposition of Carl Malamud. 3:48:01PM 3:48:02PM 3:48:07PM 3:48:09PM

BY MR. FEE: 3:48:10PM

Q Mr. Malamud, before you posted any copies of the plaintiffs' standards at issue on the Public Resource website, did you obtain the consent of any of the plaintiffs? 3:48:14PM 3:48:19PM 3:48:23PM 3:48:27PM

MR. BRIDGES: Objection, argumentative. 3:48:28PM

THE WITNESS: No. 3:48:32PM

BY MR. FEE: 3:48:32PM

Q Did you attempt to get the consent of any of the plaintiffs? 3:48:33PM 3:48:36PM

MR. BRIDGES: Same objections, argumentative, vague and ambiguous. 3:48:38PM 3:48:38PM

THE WITNESS: I talked to at least one of the plaintiffs, NFPA. 3:48:40PM 3:48:43PM

BY MR. FEE: 3:48:45PM

Q Did you ask for NFPA's permission to post the standards on the website? 3:48:45PM 3:48:48PM

MR. BRIDGES: Objection, argumentative. 3:48:51PM

THE WITNESS: We discussed broader availability of standards and the issues that were 3:48:52PM 3:48:54PM

involved. 3:48:56PM
BY MR. FEE: 3:48:57PM
Q But you don't contend that NFPA consented 3:48:57PM
to your posting of the standards on your website, 3:48:59PM
correct? 3:49:04PM
MR. BRIDGES: Objection. To the extent it 3:49:05PM
calls for a legal conclusion or position in this 3:49:06PM
lawsuit, that's going to be attorney -- that's 3:49:08PM
going to be legal opinion and attorney-client 3:49:10PM
privileged and attorney work product. If you want 3:49:15PM
to ask what Public Resource's public statements 3:49:18PM
have been outside the context of this litigation, 3:49:21PM
feel free, but I'm going to instruct him not to 3:49:24PM
talk about what the positions are taken by the 3:49:27PM
counsel in the lawsuit. 3:49:30PM
BY MR. FEE: 3:49:31PM
Q You're instructing him not answer whether 3:49:32PM
or not NFPA granted consent to the posting of those 3:49:34PM
standards on Mr. Malamud's website on the grounds of 3:49:37PM
privilege? 3:49:41PM
MR. BRIDGES: I don't think that's what 3:49:41PM
the question -- maybe I'm wrong, but could the 3:49:41PM
court reporter please reread the question? 3:49:42PM
THE REPORTER: Okay. 3:49:45PM
(The reporter read the record 3:49:45PM

as requested.) 9:21:04AM

MR. BRIDGES: Oh, okay. All right. 3:50:07PM

It's -- it's argumentative and vague and ambiguous. 3:50:07PM

THE WITNESS: No. 3:50:12PM

MS. RUBEL: 43? 3:51:22PM

THE REPORTER: 43. 3:51:23PM

(Exhibit 43 marked for identification.) 3:51:24PM

BY MR. FEE: 3:51:26PM

Q Mr. Malamud, I'm going to hand you what's been marked as Exhibit 43. It is a spreadsheet. On the first page it has headers of downloads, identifier and title. 3:51:26PM 3:51:29PM 3:51:36PM 3:51:38PM

Can you identify what Exhibit 43 is? 3:52:15PM

A No. What is this document? 3:52:17PM

Q This is a document that was produced in -- by your -- your counsel in connection with this case. 3:52:19PM 3:52:19PM 3:52:22PM

A Okay. 3:52:22PM

Q So what I -- I don't know what this is, obviously, that's why I'm asking, but in the left-hand column you see a reference to downloads. At some point in time did you try to create a spreadsheet that identified the number of downloads of various ASTM standards from your website? 3:52:24PM 3:52:30PM 3:52:33PM 3:52:35PM 3:52:39PM 3:52:41PM

A You know, I don't recall this document. 3:52:44PM

Do you have a date? 3:52:58PM

Q This is the document as it was produced. 3:53:00PM

It's a -- it was produced as an Excel spreadsheet 3:53:02PM

with just this data in it, I believe. The Bates 3:53:06PM

label for the record is PRO_0023265. 3:53:08PM

A So when I see the word "identifier," that 3:53:17PM

tells me that this is data obtained from the 3:53:21PM

Internet Archive search engine. 3:53:23PM

Q Did you at some point in time attempt to 3:53:29PM

determine how many downloads there were from the 3:53:31PM

Internet Archive website of standards that you had 3:53:35PM

posted to the Internet Archive website? 3:53:39PM

MR. BRIDGES: Objection, vague and 3:53:41PM

ambiguous. 3:53:41PM

THE WITNESS: Yes, I did. 3:53:43PM

BY MR. FEE: 3:53:48PM

Q Is that what defendant's exhibit -- or 3:53:48PM

what Exhibit 43 is? 3:53:48PM

MR. BRIDGES: Objection, may call for 3:53:51PM

speculation, competence. 3:53:52PM

THE WITNESS: It would require speculation 3:53:53PM

on my part, that's certain. Yes. 3:53:55PM

BY MR. FEE: 3:53:57PM

Q Are you able to identify how many times 3:54:59PM

any particular ASTM standard that you posted to the 3:55:02PM

Internet Archive had been downloaded by individuals at the Internet Archive website? 3:55:05PM 3:55:09PM

MR. BRIDGES: Objection, competence, calls for speculation, vague and ambiguous. 3:55:13PM 3:55:14PM

THE WITNESS: I can run the advanced search query and ask for the download identifier and title fields from the Internet Archive. 3:55:18PM 3:55:19PM 3:55:22PM

BY MR. FEE: 3:55:26PM

Q And you had done that before in connection with this matter? 3:55:27PM 3:55:29PM

A Yes. 3:55:31PM

Q But you're not sure if Exhibit 43 is the end result of that search? 3:55:33PM 3:55:35PM

A I -- I have no idea if this is intermediate work product, what the date is. I don't know. 3:55:37PM 3:55:39PM 3:55:42PM

BY MR. FEE: 3:55:52PM

Q I'm going to hand you a spreadsheet that was produced in native format as PRO_00345530. It's going to be marked as Exhibit 44. 3:55:52PM 3:55:55PM 3:56:03PM

(Exhibit 44 marked for identification.) 3:56:09PM

BY MR. FEE: 3:56:09PM

Q Can you identify Exhibit 44? 3:56:48PM

A This appears to be an initial stats run on 3:56:50PM

an HTML version that was produced in conjunction with HTC and -- and yourself; is that correct? 4:31:36PM 4:31:40PM

MR. BRIDGES: If he's asking about the whole document, then make sure that you understand the whole document and answer the question. 4:31:46PM 4:31:47PM 4:31:50PM

THE WITNESS: Uh-huh. Yes. 4:31:52PM

BY MR. REHN: 4:31:57PM

Q And -- and when -- and the other link would generally be a link to a PDF, and -- and the way that that PDF was made was you scanned the standard as it was purchased, ran OCR and uploaded that with your cover page attached as well? 4:31:59PM 4:32:01PM 4:32:08PM 4:32:11PM 4:32:16PM

A Yes. 4:32:19PM

Q And the cover page has a representation these standards have been incorporated by reference; is that right? 4:32:19PM 4:32:22PM 4:32:25PM

A Yes, sir. 4:32:29PM

Q Now, when we see examples of standards where there's only one link, like if you'll turn to the second page of this document, you'll look, for example, in Connecticut and you'll see in the electrical column there's the NEC 2005. Do you see that? 4:32:30PM 4:32:34PM 4:32:37PM 4:32:40PM 4:32:43PM 4:32:49PM

A Yes, I do. 4:32:49PM

Q In that case, do you know which -- do you 4:32:51PM

Q Including downloading a copy of the standards that are listed here? 5:04:22PM 5:04:23PM

MR. BRIDGES: Objection, lacks foundation, assumes facts not in evidence, vague and ambiguous. 5:04:25PM 5:04:26PM

THE WITNESS: You can view the object and, yes, they do have a download button. 5:04:29PM 5:04:33PM

BY MR. REHN: 5:04:36PM

Q So you could, for example, download a copy to your desktop on your computer at home? 5:04:36PM 5:04:38PM

MR. BRIDGES: Objection, hypothetical and assumes facts not in evidence. 5:04:41PM 5:04:45PM

THE WITNESS: Yes. 5:04:47PM

BY MR. REHN: 5:04:47PM

Q If you can take a quick look at another document. I think this will be No. 50. Sorry. Wide table here. 5:04:48PM 5:04:52PM 5:05:39PM

(Exhibit 50 marked for identification.) 11:31:26AM

BY MR. REHN:

Q And Exhibit 50 has a column marked downloads, then a column marked identifier and a column marked title; is that correct. 5:05:46PM 5:05:50PM 5:05:53PM

MR. BRIDGES: You're asking about the exhibit paper itself, I assume? Otherwise, I'm objecting. 5:05:57PM 5:05:59PM 5:06:03PM

THE WITNESS: That's what this piece of 5:06:04PM

paper says, yes.
BY MR. REHN:
Q And I can represent to you that this is a document that Public Resource produced to the plaintiffs in this litigation.
MR. BRIDGES: Do you have a Bates number on that, since this doesn't?
MR. REHN: Hold on. I e-mailed it to Kevin. It's the first one e-mailed to you today. It should be like one page.
MR. FEE: PRO_00232652, 232652.
MR. BRIDGES: Thank you.
BY MR. REHN:
Q But have you seen this document before?
A Yes.
Q You have seen this document before today?
A I have seen the data on this document.
Q And what's your understanding of what that data represents?
A It's the result of an advanced query on the search interface for the Internet Archive with three pieces of data returned, the number of downloads, the identifier and the title of --
THE REPORTER: I'm sorry. The three pieces of data returned...

THE WITNESS: Which include the downloads, the identifier and the title. 5:07:55PM

THE REPORTER: Thank you. 5:07:58PM

BY MR. REHN: 5:07:59PM

Q Did you run that query? 5:08:02PM

A Yes. 5:08:03PM

Q To produce this data? 5:08:04PM

A Yes. 5:08:06PM

Q Do you remember when you ran that query? 5:08:06PM

A No. 5:08:09PM

Q Could you give me a -- was it six months ago, a year ago? Do you have any rough ballpark recollection? 5:08:10PM 5:08:14PM 5:08:18PM

A January 2014 is my rough recollection. 5:08:20PM

Q So a little over a year ago? 5:08:24PM

A Correct. 5:08:26PM

Q And your understanding is that as of that date, this represents the number of times each of these standards have been downloaded on the Internet Archive website? 5:08:27PM 5:08:29PM 5:08:32PM 5:08:34PM

MR. BRIDGES: Objection, may call speculation, assumes facts not in evidence, lacks foundation. 5:08:39PM 5:08:41PM 5:08:42PM

THE WITNESS: Download is a very imprecise term. It's -- it's what the Internet Archive says 5:08:43PM 5:08:45PM

how it was typed in -- 5:22:52PM
THE REPORTER: -- in the transcription. 5:22:52PM
MR. REHN: I'll just repeat the question. 5:22:58PM
BY MR. REHN: 5:22:59PM
Q Between -- on Rows 2 through 24 in the 5:22:59PM
identifier column, each identifier begins 5:23:01PM
gov.law.nfpa and is followed by the number of the 5:23:04PM
standard; is that correct? 5:23:12PM
MR. BRIDGES: You're talking about the 5:23:13PM
document? I'll -- I'll object to the extent that 5:23:15PM
you're asking a question beyond what is stated on 5:23:16PM
this document. 5:23:20PM
THE WITNESS: It is Rows 2 through 25, not 5:23:23PM
Rows 2 through 24, and some of the identifiers have 5:23:26PM
a number and some say NEC. 5:23:32PM
BY MR. REHN: 5:23:36PM
Q Right. So, for example, in Row 12 it 5:23:37PM
says, gov.law.nfpa.NEC.2011. 5:23:40PM
A That is, in fact, what it says. 5:23:47PM
Q And then on Row 26, what does the 5:23:50PM
identifier say there? 5:23:52PM
MR. BRIDGES: By the way, objection, lack 5:23:59PM
of foundation, assumes facts not in evidence, vague 5:24:00PM
and ambiguous. 5:24:02PM
THE WITNESS: It says, NFPA.NEC.2014. 5:24:04PM

BY MR. REHN: 5:24:09PM

Q And is it your understanding that is the identifier you used when you uploaded that particular document to the Internet Archive website? 5:24:10PM 5:24:10PM 5:24:13PM

MR. BRIDGES: Objection, lacks foundation, assumes facts not in evidence and argumentative, vague and ambiguous. 5:24:16PM 5:24:17PM 5:24:21PM

THE WITNESS: It apparently is. 5:24:30PM

BY MR. REHN: 5:24:32PM

Q I'd invite you just to scroll through this document. Are there any other standards listed in this document that do not begin gov.law? 5:24:32PM 5:24:36PM 5:24:38PM

MR. BRIDGES: I'm sorry. Can you -- can I have the court reporter repeat the question? 5:25:02PM 5:25:02PM

(The reporter read the record as requested.) 5:25:02PM 9:21:04AM

MR. BRIDGES: Objection, misleading, lacks foundation, mischaracterizes testimony, I think. And if it presumes to be based on earlier testimony, argumentative and vague and ambiguous. 5:25:03PM 5:25:05PM 5:25:09PM 5:25:14PM

THE WITNESS: All of the identifiers in Column A, with the exception of Row 26, begin with gov.law. 5:25:19PM 5:25:21PM 5:25:25PM

BY MR. REHN: 5:25:29PM

Q So do you know why you picked a different 5:25:29PM

(Recess taken.) 10:27:40AM

THE VIDEOGRAPHER: We're back on the record. The time is 5:41 p.m. This marks the beginning of Disc No. 4 in the deposition of Carl Malamud. 5:40:19PM 5:40:23PM 5:40:27PM 5:40:30PM

BY MR. REHN: 5:40:31PM

Q Could I just ask you to clarify again what your understanding of the word "access" is -- is, as we've been discussing it? 5:40:31PM 5:40:34PM 5:40:38PM

MR. BRIDGES: Objection to the extent it's not in the context of a particular question, vague and ambiguous, lacks foundation. 5:40:41PM 5:40:42PM 5:40:46PM

THE WITNESS: I can tell you what access means in the context of the web server that I operate. 5:40:48PM 5:40:50PM 5:40:52PM

BY MR. REHN: 5:40:53PM

Q Sure. 5:40:53PM

A Access is an HTTP GET request from a client, G-E-T, which returns data successfully that the client had asked for. 5:40:55PM 5:41:01PM 5:41:08PM

Q So it means that -- when you say "client," you mean somebody who is using your website, somebody who is on the Internet and goes to your website? Is that what you mean by the word "client" in that -- 5:41:11PM 5:41:14PM 5:41:16PM 5:41:19PM 5:41:23PM

MR. BRIDGES: Objection, lacks foundation. 5:41:24PM
THE WITNESS: I mean another computer on 5:41:26PM
the Internet that contacts the HTTP server on my 5:41:27PM
computer. 5:41:31PM
BY MR. REHN: 5:41:32PM
Q So when that other computer receives 5:41:32PM
information from your server that they've requested, 5:41:35PM
that's an access? 5:41:38PM
A The way I count accesses is I look for a 5:41:42PM
status code 200, which is a complete transfer of the 5:41:46PM
requested file, or a series of access codes 206, 5:41:51PM
which are partial transfers as used on, for example, 5:41:57PM
a mobile phone that gets a piece of a document, then 5:42:01PM
another piece, then another piece. 5:42:05PM
Q And when you have the series of transfers, 5:42:08PM
you only count it as an access if they sum to the 5:42:10PM
entire document? 5:42:14PM
A No. 5:42:15PM
MR. BRIDGES: Objection, mischaracterizes 5:42:17PM
his testimony. 5:42:19PM
THE WITNESS: The way I count it is very 5:42:20PM
specific. It is the number of 200 or 206 status 5:42:27PM
codes by a unique IP address to a unique document 5:42:31PM
within a given hour. 5:42:35PM
BY MR. REHN: 5:42:45PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 5:43:48PM 5:43:49PM

THE WITNESS: I know that some people count unique accesses over a 24-hour period, not a one-hour period, so I think I'm actually being more conservative. 5:43:50PM 5:43:51PM 5:43:56PM 5:43:58PM

BY MR. REHN: 5:44:00PM

Q And do you -- is it your understanding that the Internet Archive's method for counting accesses is similar to what you've described? 5:44:00PM 5:44:01PM 5:44:05PM

MR. BRIDGES: Objection, competence, lacks foundation, may call for speculation, vague and ambiguous. 5:44:09PM 5:44:09PM 5:44:09PM

THE WITNESS: My understanding is that they count over a 24-hour period. 5:44:13PM 5:44:14PM

BY MR. REHN: 5:44:16PM

Q I'm going to hand you what we're marking as Exhibit No. 52. 5:44:16PM 5:44:29PM

(Exhibit 52 marked for identification.) 5:44:59PM

BY MR. REHN: 5:44:59PM

Q Do you recognize this document? 5:44:59PM

A I certainly did not produce it. 5:45:00PM

Q Do you recognize what it is? 5:45:03PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 5:45:05PM 5:45:05PM

THE WITNESS: It's possible it's a screen dump from the Internet Archive. 5:45:07PM 5:45:10PM

BY MR. REHN: 5:45:13PM

Q What do you mean by "screen dump"? 5:45:13PM

A It looks like somebody accessed a -- a URL and hit the print command in this case. 5:45:18PM 5:45:22PM

Q So does -- does this appear to be the URL where the 2011 National Electrical Code is on the Internet Archive? 5:45:25PM 5:45:28PM 5:45:32PM

A Yes. 5:45:36PM

Q And I can represent to you -- 5:45:37PM

MR. BRIDGES: I'm sorry. I need more time to object. I am going to object on the basis of vague and ambiguous. 5:45:39PM 5:45:39PM 5:45:41PM

BY MR. REHN: 5:45:45PM

Q Well, I can represent to you that you got it right. This is the Internet Archive page where the 2011 National Electrical Code is available. It was accessed yesterday at 11:35 a.m. And there's a box kind of in the center of the page, and in that box we can see a -- a graphic that says, "notice of incorporation." Do you see that? 5:45:46PM 5:45:47PM 5:45:51PM 5:45:54PM 5:46:03PM 5:46:07PM 5:46:10PM

A Yes, I do. 5:46:13PM

Q And do you recognize what that is? 5:46:14PM

A It looks like my standard cover page for 5:46:19PM

THE WITNESS: They can access this document in a variety of formats.

BY MR. REHN:

Q And by "access," that would encompass the possibility of downloading a copy of the standard to their own computer?

MR. BRIDGES: Objection, argumentative, lacks foundation, assumes facts not in evidence, vague and ambiguous.

THE WITNESS: "Download" is simply not a term that -- it's just not a very precise term. "Access" is the term that I understand and it's when a computer on the Internet accesses an HTTP server on the Internet.

BY MR. REHN:

Q Okay. Is it your understanding that a user of a computer on the Internet can go to this web page and obtain a PDF version of this document, save it to their desktop, from which they can then use it as they see fit, without even being connected to the Internet in the future?

MR. BRIDGES: Lacks foundation, assumes facts not in evidence, vague and ambiguous, hypothetical.

THE WITNESS: Are -- are you asking

whether that capability is possible? 5:48:31PM
BY MR. REHN: 5:48:34PM
Q Yes, using these links here. 5:48:34PM
MR. BRIDGES: Objection, may call for speculation, may lack knowledge. 5:48:38PM 5:48:39PM
THE WITNESS: It's theoretically possible, yes. 5:48:42PM 5:48:44PM
BY MR. REHN: 5:48:45PM
Q So -- so -- and that same user, having that -- a copy of that document saved on their desktop, could, say, print a copy of that document if they have a printer attached to their computer? 5:48:45PM 5:48:47PM 5:48:50PM 5:48:54PM
MR. BRIDGES: Objection, hypothetical, lacks foundation, assumes facts not in evidence, vague and ambiguous. 5:48:59PM 5:48:59PM 5:49:00PM
THE WITNESS: On -- on some computers, yes. 5:49:04PM 5:49:04PM
BY MR. REHN: 5:49:06PM
Q And on those computers from which people can print PDFs that are saved to their desktop, they can print as many copies as they like? 5:49:06PM 5:49:09PM 5:49:13PM
MR. BRIDGES: Objection, hypothetical, lacks foundation, vague and ambiguous, argumentative. 5:49:16PM 5:49:16PM 5:49:19PM
THE WITNESS: It's -- it's very 5:49:22PM

hypothetical. It's if -- if you have a printer on your computer, you can print a piece of paper. 5:49:22PM 5:49:24PM

BY MR. REHN: 5:49:27PM

Q And if you have a file that you've accessed and saved to your desktop from the Internet but is now saved on your computer, you can print multiple copies of that file? 5:49:28PM 5:49:30PM 5:49:34PM 5:49:37PM

MR. BRIDGES: Objection, assumes many facts not in evidence, lacks foundation, hypothetical, vague and ambiguous. 5:49:40PM 5:49:41PM 5:49:44PM

THE WITNESS: I believe you accessed a URL on the Internet and printed a file, so I would say yes, you certainly were capable of doing that. 5:49:47PM 5:49:51PM 5:49:54PM

MR. BRIDGES: Let the record reflect that the client was holding Exhibit 52 up in the air in context with that response. 5:49:57PM 5:49:57PM 5:50:04PM

BY MR. REHN: 5:50:10PM

Q If we could go and look at the information underneath that box in the center, is that information that you entered when you uploaded this document to the Internet Archive website? For example, where it says "description" and then it says "legally binding document," would that be information you entered? 5:50:10PM 5:50:13PM 5:50:18PM 5:50:22PM 5:50:26PM 5:50:28PM 5:50:30PM

MR. BRIDGES: Objection, vague and 5:50:32PM

ambiguous. Are you asking specifically about the description? 5:50:33PM 5:50:37PM

MR. REHN: We'll start with the description. 5:50:38PM 5:50:40PM

THE WITNESS: Yes. 5:50:42PM

BY MR. REHN: 5:50:43PM

Q And we'll just go through it. Where it says author, National Fire Protection Association, did you enter that information? 5:50:49PM 5:50:52PM 5:50:56PM

A Yes. 5:50:59PM

Q When you -- I believe it -- was it the APC call? What was it? 5:51:01PM 5:51:06PM

A API, application programming interface. 5:51:07PM

Q API call. So when you use the API, does it give you an option to enter an author? Is that one of the options that are identified there? 5:51:11PM 5:51:14PM 5:51:16PM

A You can specify any piece of metadata and a value associated with that metadata. 5:51:21PM 5:51:25PM

Q And you identified National Fire Protection Association as the author of this document? 5:51:29PM 5:51:31PM 5:51:33PM

A I did. 5:51:35PM

Q So -- and that was consistent with your understanding that the NFPA is the author of the 2011 NEC? 5:51:37PM 5:51:39PM 5:51:41PM

MR. BRIDGES: Objection, calls for a legal conclusion, lacks -- calls for a legal opinion, assumes facts not in evidence, lacks foundation, vague and ambiguous. 5:51:44PM 5:51:45PM 5:51:48PM 5:51:50PM

THE WITNESS: I don't know the precise meaning of the term "author." They were certainly the source of this document. 5:51:54PM 5:51:56PM 5:51:59PM

BY MR. REHN: 5:52:04PM

Q But you identified them as the author here. 5:52:04PM 5:52:06PM

MR. BRIDGES: Objection, asked and answered. 5:52:07PM 5:52:08PM

THE WITNESS: Just as you discussed "downloads" as a term. Yes, I -- I use the word "author." 5:52:10PM 5:52:12PM 5:52:16PM

BY MR. REHN: 5:52:16PM

Q So it was your understanding when you uploaded this document that the NFPA was the author of this document? 5:52:17PM 5:52:18PM 5:52:21PM

MR. BRIDGES: Objection, asked and answered and calls for a legal conclusion, lacks foundation, assumes facts not in evidence, vague and ambiguous. 5:52:22PM 5:52:23PM 5:52:27PM 5:52:29PM

THE WITNESS: I put the word "author," a colon and National Fire Protection Association. As 5:52:30PM 5:52:32PM

to the technical meaning of the term "author," that's -- you folks are lawyers. 5:52:36PM 5:52:39PM

BY MR. REHN: 5:52:41PM

Q Sure. But just in the way you understand the term, that's what -- you understood that NFPA was the author? 5:52:41PM 5:52:43PM 5:52:44PM

MR. BRIDGES: Objection, misstates testimony, calls for a legal conclusion, lacks foundation, vague and ambiguous. 5:52:45PM 5:52:47PM 5:52:50PM

THE WITNESS: I put the word "author," colon and National Fire Protection Association. 5:52:51PM 5:52:53PM

BY MR. REHN: 5:53:09PM

Q And if we could turn to the next page, you'll see a section titled, "Selected Metadata." 5:53:09PM 5:53:11PM

A Yes, I see that. 5:53:24PM

Q And do you see a -- a line that says, "credits"? 5:53:24PM 5:53:26PM

A I do. 5:53:30PM

Q And what does that say? 5:53:32PM

A It was uploaded by Public.Resource.Org. 5:53:33PM

Q And do you always put that credits line in documents that you upload to the Internet Archive? 5:53:38PM 5:53:41PM

MR. BRIDGES: Objection, argumentative. 5:53:44PM

THE WITNESS: I don't know if I always do. 5:53:46PM

BY MR. REHN: 5:53:47PM

creator of this object was not asserting any rights. 5:58:59PM 5:59:03PM

BY MR. REHN: 5:59:04PM

Q What do you mean by "creator of this object"? 5:59:04PM 5:59:06PM

A The person who exercised the API call that resulted in the creation of this identifier; me in this case. 5:59:06PM 5:59:09PM 5:59:16PM

Q I'm going to mark Exhibit 53. 5:59:47PM

(Exhibit 53 marked for identification.) 11:31:26AM

BY MR. REHN: 11:31:26AM

Q Do you recognize this document?

A It appears to be an Internet Archive screen dump like your previous exhibit. 6:00:23PM 6:00:27PM

Q And this one is for the 2014 National Electrical Code; is that right? 6:00:30PM 6:00:36PM

A That is what it appears to be, yes. 6:00:39PM

Q Now, this is -- looks pretty similar to Exhibit 52. Would you agree with that? 6:00:41PM 6:00:45PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 6:00:48PM 6:00:49PM

THE WITNESS: There are some similarities. 6:00:55PM

BY MR. REHN: 6:00:57PM

Q Like there's the box in the middle and then there's options for how to view the book on the 6:00:58PM 6:01:00PM

left? 6:01:03PM
A Yes. 6:01:04PM
Q And then there's some information below the box in the middle such as author, subject and so forth? 6:01:05PM 6:01:08PM 6:01:14PM
MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 6:01:14PM 6:01:16PM
THE WITNESS: Yes. 6:01:22PM
BY MR. REHN: 6:01:24PM
Q And you put that information in this -- in this as well when you used the API interface to upload this document? 6:01:26PM 6:01:28PM 6:01:37PM
MR. BRIDGES: Objection, vague and ambiguous. 6:01:38PM 6:01:39PM
THE WITNESS: Yes. 6:01:40PM
BY MR. REHN: 6:01:42PM
Q So again, you have -- you -- you chose to identify the author as National Fire Protection Association? 6:01:43PM 6:01:44PM 6:01:47PM
MR. BRIDGES: Objection. To the extent you're asking him a question with significance of legal terms, I'll object on the ground that it calls for a legal opinion. 6:01:51PM 6:01:52PM 6:01:55PM 6:01:57PM
THE WITNESS: Once again, I put the identifier author, colon, and National Fire 6:02:00PM 6:02:01PM

Protection Association in -- in the HTML. 6:02:03PM

BY MR. REHN: 6:02:07PM

Q And was -- and that was your understanding 6:02:07PM
at the time you uploaded this document, that the 6:02:09PM
National Fire Protection Association was the author 6:02:11PM
as you would use that word? 6:02:14PM

MR. BRIDGES: Objection, vague and 6:02:17PM
ambiguous, calls -- may call for a legal 6:02:18PM
conclusion, lacks foundation, assumes facts not in 6:02:19PM
evidence. 6:02:22PM

THE WITNESS: Again, I use the label 6:02:24PM
author and a colon and National Fire Protection 6:02:26PM
Association. 6:02:28PM

BY MR. REHN: 6:02:31PM

Q And you -- you chose the word "author"? 6:02:32PM

A Yes. 6:02:34PM

Q And then under subject, there's a few 6:02:34PM
things listed, and the first one -- what is the 6:02:38PM
first one there? 6:02:41PM

MR. BRIDGES: Objection, vague and 6:02:43PM
ambiguous. 6:02:44PM

THE WITNESS: Subject, colon, required in 6:02:46PM
all 50 states, Public Safety Code, legally binding 6:02:48PM
document. 6:02:52PM

BY MR. REHN: 6:02:52PM

MR. BRIDGES: And you need to review the document if you're going to answer that question. 6:20:14PM 6:20:16PM

And I'll object on the -- to the question as vague and ambiguous. 6:20:23PM 6:20:26PM

Read the whole document, please. 6:20:41PM

THE WITNESS: The statements by Man 1 do, in fact, represent my views. 6:21:16PM 6:21:17PM

BY MR. REHN: 6:21:20PM

Q And did you make the decision that this video should be posted on Public Resource's website? 6:21:21PM 6:21:22PM

A Yes. 6:21:26PM

Q And do the statements by you in this document represent the views of Public Resource? 6:21:26PM 6:21:28PM

A Yes. 6:21:33PM

Q So let's take a look at the page Bates-stamped 167544. And it's your view that the National Fire Protection Association does amazing work and saves lives? 6:21:33PM 6:21:42PM 6:21:52PM 6:21:57PM

A Yes, I said that. 6:21:58PM

Q And it's your view that the National Fire Protection Association protects the lives of volunteer firefighters? 6:21:59PM 6:22:01PM 6:22:04PM

MR. BRIDGES: Objection. That misstates the document. 6:22:13PM 6:22:14PM

THE WITNESS: No, that's not what I say on 6:22:15PM

this page. 6:22:17PM
BY MR. REHN: 6:22:17PM
Q It's your view that the National Fire 6:22:18PM
Protection Association's standards for fire 6:22:20PM
sprinklers, standards for fire hydrants, standards 6:22:22PM
for foam, standards for life safety protect lives of 6:22:27PM
our volunteer firefighters. 6:22:28PM
A Oh. Yes. 6:22:31PM
Q And do you also -- would you also take the 6:22:32PM
view that National Fire Protection itself protects 6:22:33PM
the lives of volunteer firefighers through its 6:22:35PM
activities? 6:22:39PM
MR. BRIDGES: Objection, argumentative, 6:22:40PM
lacks foundation, vague and ambiguous. 6:22:41PM
THE WITNESS: I can't speak to that. I -- 6:22:43PM
the standards certainly do. 6:22:44PM
BY MR. REHN: 6:22:47PM
Q And is it your view that the standards 6:22:47PM
protect the lives of children? 6:22:49PM
A Yes. 6:22:51PM
Q And it's your view that it's important 6:22:52PM
that organizations like the National Fire Protection 6:22:53PM
Association continue to survive? 6:22:55PM
A Absolutely. 6:22:59PM
Q And would you extend that to other 6:22:59PM

standards development organizations as well, that it's important they continue to survive? 6:23:02PM 6:23:04PM

MR. BRIDGES: Objection, lacks foundation. 6:23:07PM

THE WITNESS: Do you have a specific standards organization in mind? 6:23:08PM 6:23:09PM

BY MR. REHN: 6:23:11PM

Q How about ASTM. 6:23:12PM

A I'm a big fan of ASTM. 6:23:14PM

Q So it's important they continue to survive? 6:23:17PM 6:23:18PM

MR. BRIDGES: Objection, argumentative. 6:23:19PM

THE WITNESS: I think the standards that are -- the subject area of the standards that ASTM works in is very important and we need to continue to have standards in that area. 6:23:21PM 6:23:22PM 6:23:27PM 6:23:30PM

BY MR. REHN: 6:23:32PM

Q And continue to have organizations that develop standards and keep them up-to-date? 6:23:32PM 6:23:34PM

MR. BRIDGES: Objection, argumentative, lacks foundation. 6:23:36PM 6:23:37PM

THE WITNESS: Yes, I believe standards are important. 6:23:41PM 6:23:43PM

BY MR. REHN: 6:23:43PM

Q And would you say the same about the standards of ASHRAE? 6:23:43PM 6:23:45PM

MR. BRIDGES: Objection, lacks foundation, vague and ambiguous. 6:23:47PM 6:23:48PM

THE WITNESS: I think ASHRAE Standard 90.1 is an important standard. 6:23:51PM 6:23:53PM

BY MR. REHN: 6:23:59PM

Q Is it your view that standards development organizations need funding to do the work that they do, including standards development? 6:24:01PM 6:24:04PM 6:24:07PM

MR. BRIDGES: Objection, may call for a lay opinion, vague and ambiguous, and -- 6:24:09PM 6:24:11PM

THE WITNESS: I think -- 6:24:19PM

MR. BRIDGES: -- and to the extent it calls for a legal opinion, I would object on that basis. 6:24:19PM 6:24:21PM 6:24:25PM

THE WITNESS: I would want to analyze the specific standards body and their funding sources and the work that they do. 6:24:25PM 6:24:26PM 6:24:28PM

BY MR. REHN: 6:24:31PM

Q Can you read the first sentence of that paragraph that begins with, Man 1 804, the sentence following Man 1 804? 6:24:33PM 6:24:34PM 6:24:38PM

A "Our goal is here to publish a law to establish the principle that the law become available, but then government should take this over and figure out a way to make the law available and 6:24:40PM 6:24:43PM 6:24:46PM 6:24:49PM

EXHIBIT 3

FILED UNDER SEAL

EXHIBIT 4

UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS dba ASTM INTERNATIONAL, NATIONAL FIRE PROTECTION ASSOCIATION, INC., and AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS, Plaintiffs/ Counter-Defendants,	
v.	No. 1:13-cv-01215-EGS
PUBLIC.RESOURCE.ORG, Defendant/ Counter-Plaintiff.	

Coos Bay, Oregon

Thursday, November 13, 2014

39(b)(6) DEPOSITION OF:

REBECCA MALAMUD,
PUBLIC.RESOURCE.ORG,

taken pursuant to notice, by counsel for Plaintiffs/ Counter-Defendants at Red Lion Inn, 1313 North Bayshore Drive, Coos Bay, Oregon, before Jan R. Duiven, CSR, FCRR, CCP, Certified Shorthand Reporter in and for the State of Oregon, beginning at 9:00 a.m., when were present on behalf of the respective parties:

MR. STOLTZ: Objection to form. 09:48:11
"Core group." 09:48:14
BY MR. FEE: 09:48:15
Q. Have you ever used the phrase "core 09:48:15
group" in connection with Rural Design Collective 09:48:17
before? 09:48:20
A. This year. 09:48:20
Q. Have you used the phrase "core group"? 09:48:20
A. Yes. 09:48:23
Q. Okay. What does that mean? 09:48:23
A. It just -- most of the people working 09:48:27
this summer were that age. 09:48:37
Q. Okay. You're comfortable using the 09:48:40
word "core group" in connection with this business 09:48:42
of yours? Your counsel objected. He didn't think 09:48:44
you could understand "core group." I just want to 09:48:47
make sure you understand the phrase. 09:48:49
A. I'm just using it as a phrase. 09:48:54
Q. Okay. And just tell me what you meant 09:48:55
by "core group." I want to make sure we're all 09:48:58
clear here. What did core group mean? 09:49:00
A. Most of the mentees this year were in 09:49:02
that age group. 09:49:06
Q. Okay. So the core group as of 2014 at 09:49:08
Rural Design Collective was children ages 7 to 14? 09:49:14

A. Yes. 09:49:16
Q. What was the age range of the core 09:49:17
group in 2013? 09:49:20
A. Well, we -- like 7 to 35. 09:49:22
Q. Okay. Was there one 35-year-old? 09:49:39
A. Yes. 09:49:42
Q. Okay. Who was the next oldest person 09:49:42
in 2013? 09:49:45
A. 2013? Probably 14. I don't think I 09:49:47
had high school in 2013 -- last year, '14. 09:50:06
Q. Who was the 35-year-old mentee of 09:50:22
yours that participated in the Rural Design 09:50:24
Collective? 09:50:26
A. That was Jasper. 09:50:26
Q. Did persons in the Rural Design 09:50:31
Collective program work on any ASTM or NFPA 09:50:40
standards? 09:50:43
A. Yes. 09:50:45
Q. Do you know which persons in the 09:51:04
program worked on the ASTM or NFPA standards? 09:51:07
A. Jasper and Levi. 09:51:10
Q. So Levi's also part of the Rural 09:51:11
Design Collective? 09:51:16
A. Yes, but he has graduated. He's -- 09:51:16
he's a mentor. 09:51:21

of some sort. Correct? 09:55:52
A. Right. 09:55:53
Q. Do the participants pay Point B 09:55:53
anything to be in this program? 09:56:00
A. No. But I -- we have stipends based 09:56:01
on performance. 09:56:08
Q. Point B pays stipends to the 09:56:09
participants? 09:56:12
A. Awards, scholarship funds. 09:56:13
Q. Did any participants in the Rural 09:56:22
Design Collective earn awards or stipends for 09:56:24
their work on NFPA or ASTM standards? 09:56:26
A. No. 09:56:28
Q. What is a standard sprint? 09:56:29
A. We pick an area of public concern that 09:56:54
we were enthusiastic about and convert the 09:57:03
graphics for that topic. 09:57:09
Q. You -- 09:57:16
A. It was intended to be motivational. 09:57:17
It is. 09:57:22
Q. What graphics are you converting with 09:57:26
standard sprint? 09:57:34
A. At the time it was public safety 09:57:35
related to theater accessibility. 09:57:40
Q. Was there only one standard sprint 09:57:45

(Deposition Exhibit No. 18 marked for identification.)

BY MR. FEE:

Q. Ms. Malamud, I'm going to hand you Exhibit 18, which is a printout of the Rural Design Collective Headquarters Codes of the World Overview and Roadmap. It's six pages.

A. Okay.

Q. Are you familiar with Exhibit 18?

A. Yes.

Q. Is this a page from the Rural Design Collective website?

A. Yes.

Q. Did you author this page?

A. Yes, I did.

Q. Is everything that's included in this page accurate to the best of your knowledge?

A. Yes.

Q. I have no other questions about that.

MR. STOLTZ: You can put it aside.

THE WITNESS: Okay.

BY MR. FEE:

Q. At some point in time do you recall having a series of communications with Carl Malamud regarding whether or not you were

(Deposition Exhibit No. 21 marked for identification.)

BY MR. FEE:

Q. Ms. Malamud, I'm going to hand you what's been marked as Exhibit 21. It appears to be a series of emails. The top one is from Mr. Malamud to you, dated January 4th, 2014, at 12:01 p.m. Bates labeled PRO42289-01. Take your time and look at it, but once you've read it, if you can identify this as a series of emails between you and Mr. Malamud.

A. (Pause.) Okay.

Q. First of all, can you recognize -- do you recognize this as a series of emails between you and Mr. Malamud?

A. Yes.

Q. Why don't we start at the beginning of the email chain, which would be on the last page. There's an email on December 31, 2013, at 3:02 p.m. from you. Can you see? It starts off saying, "All art completed, both diagrams and MathML, with the exception of NFPA.NEC.2011. We have about 12 more diagrams to complete on that. And we should have that completed by Friday."

Do you see that?

(Recess: 2:54 p.m. to 3:02 p.m.) 15:03:07
THE VIDEOGRAPHER: We're going back 15:03:07
on the record. The time is 3:02 p.m. 15:03:13
(Deposition Exhibit No. 27 15:03:22
marked for identification.) 15:03:22
(Mr. Childs not present.) 15:03:43
BY MR. FEE: 15:03:43
Q. I'm going to hand you Exhibit 27, 15:03:43
which is a single-page email from Carl to you, 15:03:45
dated January 16th, 2014, at 3:48 p.m., and Bates 15:03:53
labeled PRO42317. Can you identify Exhibit 27 as 15:03:59
an email from Mr. Malamud to you? 15:04:17
A. Yes. 15:04:19
Q. And the subject is funding. Correct? 15:04:22
A. Yes. 15:04:26
Q. And it says, you're funded at the 15:04:27
5K-per-month level for at least six months from 15:04:31
p.r.o., as long as you can keep pumping out 15:04:35
visible progress on the SVG/MathML front." 15:04:38
A. Yes. 15:04:46
Q. And in parentheses, it says, "Plus, of 15:04:46
course, your design health, which I need, but what 15:04:49
the funders are going to be looking for is walking 15:04:53
through the standards. They're funding my legal 15:04:56
fight so that's the piece they care about." Do 15:04:59

you see that? 15:05:04
A. Yes. 15:05:04
(Mr. Childs present.) 15:05:04
BY MR. FEE: 15:05:04
Q. Do you know what funders he's 15:05:04
referring to? 15:05:13
A. I don't know exactly who they are. 15:05:13
Q. Do you have any idea what funders he's 15:05:15
referring to? 15:05:19
A. No. 15:05:19
Q. Did you ever ask, "Who are these 15:05:21
funders?" 15:05:25
A. I -- I wait for him to supply the 15:05:26
information when he wants to. 15:05:35
Q. So you never asked him for 15:05:41
information? 15:05:43
MR. STOLTZ: Object to the form. It 15:05:47
mischaracterizes her testimony. 15:05:50
A. There is funders. 15:05:59
BY MR. FEE: 15:06:02
Q. You never asked him who they were? 15:06:02
A. No. 15:06:04
MR. STOLTZ: Objection. Asked and 15:06:06
answered. 15:06:07
BY MR. FEE: 15:06:08

EXHIBIT 5

UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING
AND MATERIALS d/b/a ASTM
INTERNATIONAL;
NATIONAL FIRE PROTECTION
ASSOCIATION, INC.; and
AMERICAN SOCIETY OF HEATING,
REFRIGERATING, AND AIR
CONDITIONING ENGINEERS,

Plaintiffs/

Counter-Defendants, Case No.

v. 1:13-CV-01215-EGS

PUBLIC.RESOURCE.ORG, INC.,

Defendant/

Counter-Plaintiff.

_____/

VIDEOTAPED DEPOSITION

DEPONENT: VIKAS BHUTADA

DATE: Wednesday, November 5, 2014

TIME: 9:11 a.m.

LOCATION: 2000 Town Center, Suite 1900
Southfield, Michigan

REPORTER: Jeanette M. Fallon, CRR/RMR/CSR-3267

Q. Anything else that you're aware of? 09:33
A. No. 09:33
Q. What is content conversion? 09:33
A. Basically converting a document or -- yeah, converting any content or any document from one format to another format and making it available in an electronic -- in an electronic way. 09:33
Q. Do you know what format Public Resource would provide to HTC Global for the work that HTC Global did for Public Resource? 09:33
A. Yeah, usually PDF -- digital PDF format or image format. 09:34
Q. By image format is that the TIF image or something else? 09:34
A. Yeah, something other, TIF or JPEG, some image format. 09:34
Q. What is your understanding of the instructions that Public Resource provided if any to HTC Global regarding the work that HTC Global did for it? 09:34
A. Public Resource wanted us to -- to convert it -- convert the content in a format whereby it is available as a text or images are tagged and make it available in an output format like an HTML. 09:34
Q. So was the direction then to take the JPEG or the TIF file or the PDF file and then make basically an HTML version of that file? 09:35

A. Yes, mostly that was the -- that was the direction. 09:35
Q. And was the intent to make all the text from the TIF 09:35
or PDF file be copied word for word into the HTML 09:35
code? 09:35
A. Yes, the text conversion, correct. 09:35
Q. Is there anything more to text conversion as you use 09:35
that term than copying the text in one format and 09:35
making it in another format? 09:36
A. No. 09:36
Q. And what would you do for Public Resource with respect 09:36
to images? 09:36
A. We would just tag them; meaning if there's an image on 09:36
a PDF, we would extract that image from the PDF and 09:36
provide a tag so that it is identifiable as an image 09:36
that particular piece. 09:36
Q. So HTC Global would not do any conversion for images? 09:36
A. No. 09:36
Q. It would just take basically a copy of the image in 09:36
the TIF file, for example, and drop it into the HTML 09:36
code? 09:36
A. That's correct. 09:36
Q. With a tag to identify this as an image? 09:36
A. We would actually just tag it so then it can be -- and 09:36
the way HTC stores images, there's a format in which 09:36
it does, so it would automatically give a tag and 09:36

copies that it was requesting to be made? 09:42
A. No. 09:42
Q. Have there been any discussions between HTC Global and 09:42
Public Resource regarding an indemnification agreement 09:42
between the parties since you became aware of this 09:42
lawsuit? 09:42
MR. COUTILISH: Objection, I believe that's 09:42
asked and answered. Go ahead, answer if you can. 09:42
A. Sorry, can you repeat the question? 09:42
Q. Sure. Since you've become aware of this lawsuit have 09:42
there been any communications with Public Resource 09:42
regarding indemnification? 09:42
A. Not that I'm aware, no. 09:42
Q. Is Public Resource paying for HTC's legal 09:42
representation in connection with the subpoena? 09:42
A. No. 09:42
Q. Besides the individuals that you've already identified 09:43
during your deposition this morning, can you identify 09:43
any other specific persons that were involved in HTC 09:43
Global's relationship or work for Public Resource? 09:43
A. No, I'm not aware of any other. I'm sure there would 09:43
be people who worked in India, but I haven't worked 09:43
with them. 09:43
Q. Would all of the content digitization that was done by 09:43
HTC Global have been done by persons in India? 09:43

A. Yes. 09:43
Q. Are you knowledgeable regarding the hiring policies and procedures for the persons who do that type of work? 09:43
A. Broadly, yes. In general HTC policies, yes. 09:43
Q. What can you tell me regarding the hiring policies or requirements for persons who do content digitization in India? 09:44
A. We have a hiring process in place which whereby we screen the employees, review their resumes, personal interviews, they go through the training and the reference checks, we bring them on board. 09:44
Q. Is there any requirement that they have a particular level of educational background? 09:44
A. Yes, they have to at least have a high school degree and reasonable English communication. 09:44
Q. So they don't need to be native English speakers? 09:44
A. No. 09:44
Q. Do you have any idea what portion of the persons who do content digitization for HTC are native English speakers? 09:44
A. I don't know. 09:44
Q. Where in India are HTC's content digitization capacities located? 09:45
A. Chennai; Chennai, India. C-H-E-N-N-A-I. 09:45

Q. Do you have knowledge regarding whether or not most of the persons in that town are native English speakers? 09:45
A. What do you mean by native English speakers? They do speak English as a second -- most of them speak English as a second language. 09:45
Q. It's a second language? 09:45
A. Yes. 09:45
Q. What is the primary language in that town? 09:45
A. Tamil, T-A-M-I-L. 09:45
Q. What mechanism is in place at HTC to determine whether or not the persons involved in content digitization have I think you used the term reasonable English capabilities? 09:45
A. Oh, I'm sure there are some entrance tests they go through, but I'm not aware of exact tests what they do. 09:46
Q. Are you aware of any non-HTC employees who were involved in the content digitization for Public Resource? 09:46
A. No. 09:46
Q. Would HTC be the entity that actually posted the content that was digitized on the internet so it would be publicly available? 09:46
A. No, we did not post it on the internet. 09:46
Q. What would HTC do with the files once they had 09:46

does that. 09:49
Q. Is that group also located in the same town in India? 09:49
A. Yes. 09:49
Q. Do you know if the requirements for the quality assurance personnel are any different from the persons who do the initial digital content conversion? 09:49
A. I don't know that, no. 09:49
Q. Do you know if the quality assurance persons are native English speakers? 09:49
A. They are all -- typically in India you would see most Indians would have English as a second language not as a first language. 09:49
Q. Did HTC have a discussion with Public Resource at any point in time about whether or not it would double key or triple key these standards? 09:49
A. Yes. 09:50
Q. What do you know about that communication or communications? 09:50
A. We had submitted a proposal initially for triple key data entry. Obviously the -- I mean, it's more accurate, but there is a higher cost so we went with the double key entry approach. 09:50
Q. Can you describe what double key is? 09:50
A. In the case of double key there are two operators who either enter or extract or take the text that is 09:50

extracted by the OCR and validate as long as their entries tally. That means the text is accurate. If the entries don't tally, then there are exceptions and that's where the quality assurance person could look into it, validate and update the -- update the text correctly. 09:50 09:50 09:50 09:50 09:51 09:51

Q. How does that differ from triple key? 09:51

A. In the case of triple key you have three operators who do the data entry or the correction, and again, they would tally and look at that. There is a higher rate, higher accuracy rate because of that. 09:51 09:51 09:51 09:51

Q. And it's your understanding that HTC proposed triple key compare and Public Resource refused to do that and opted for double key compare? 09:51 09:51 09:51

A. That's correct. HTC did not -- I don't know whether HTC proposed or PRO asked for it, but eventually it was done with double key. We had submitted a proposal is what I know. 09:51 09:51 09:51 09:51

Q. The initial proposal was for triple key? 09:51

A. Correct. 09:51

(Marked for identification Deposition Exhibit No. 2.) 09:51 09:52

Q. I'm going to hand you what's been marked as Exhibit 2. It's an August 27th, 2010 email from 9:28 a.m. from Mr. Talwalkar to Carl@media.org and it's Bates labeled 09:52 09:52 09:52 09:52

PRO4964 through 65. 09:52

Let me know when you've had a chance to review that. 09:52

A. Yeah. 09:53

Q. First of all, can you identify this as an email from Mr. Talwalkar at HTC to Mr. Malamud? 09:53

A. Yes. 09:53

Q. Towards the top of the first page you see there's a description of the accuracy of double key compare and triple key compare? 09:53

A. Yes. 09:53

Q. Can you tell me first of all what the number means in the accuracy column for both of those? 09:53

A. That means that the conversion rate -- so if you have, let's say, 1,000 characters being entered, that means with triple key you could achieve an accuracy whereby only 3 characters could be wrong and with double key you would achieve an accuracy whereby up to 49 characters could be wrong. Meaning it's a tolerance for quality. Doesn't necessarily mean they are wrong, but it's a tolerance that you would have. 09:53

Q. Do you know how HTC arrived at those accuracy figures? 09:54

A. We have an operational metrics whereby when the quality control people catch issues or sometimes customers provide feedback, we are able to track that. 09:54

Q. So this accuracy number is the accuracy of the final work that's delivered to the customer? 09:54
A. Yes. 09:54
Q. So if you were to do double key compare, HTC would expect there to be 49 mistakes out of 10,000 characters or out of 1,000 characters? 09:54
A. Forty-nine out of 1,000, yeah, yes. 09:54
Q. Okay. And that's even after you've compared the double entry from both sides, gone through the QA process? 09:54
A. I'm sorry, not 49 -- 49 out of 10,000, you're right, yeah. 09:54
Q. Okay. But you would expect 49 mistakes out of 10,000 characters even after you've done the double keying, compared them both and gone through HTC's QA process? 09:54
A. It's not the expectation, but that is the maximum tolerance. You could achieve 100 percent accuracy as well, but there could be a tolerance of 49 -- 49 characters for every thousand. 09:55
Q. Is the 99.51 percent the mean for the work that's been examined by HTC? 09:55
A. Yes. 09:55
Q. So there could be -- 49 characters would be the average case, there could be perfect, or there could be 99 mistakes in 1,000 -- or 10,000; right? 09:55

they would have an orientation to this. 10:00
Q. The operators, are they trained in English? 10:00
A. Yeah. 10:00
Q. So all the training documents are also in English? 10:00
A. Yes. 10:00
Q. Does Exhibit 3 accurately describe the process that 10:00
was used for HTC's work for Public Resource? 10:00
A. Yes. 10:00
Q. Is there anything that is described in Exhibit 3 that 10:00
was not done in connection with the Public Resource 10:00
work? 10:00
A. Not that I know of, no. 10:00
Q. Are you aware of anything extra that was done to 10:00
ensure the accuracy of the work done for Public 10:01
Resource that's not described in Exhibit 3? 10:01
A. Not that I'm aware of, no. 10:01
Q. Now, when you were describing the double key process 10:01
earlier, I think you said that there would be two 10:01
operators and they would either rekey something or 10:01
start with an OCR of an image file; is that right? 10:01
A. Uh-huh. 10:01
Q. You have to answer yes or no for the court reporter. 10:01
A. Yes, yes. 10:01
Q. Okay. Do you know whether or not the Public Resource 10:01
work started with two operators retyping or with an 10:01

OCR process? 10:01
A. The decision on that really depends on the quality of 10:01
the image. So if you have a good image quality and if 10:01
OCR does a good job of converting and there are very 10:01
few errors, then operators would validate and the QC 10:01
would validate. If the image quality is bad, then 10:02
they would do the double key entry as well. 10:02
Q. How do you determine at HTC whether or not the OCR has 10:02
done a good job at character recognition? 10:02
A. It's the quality of the image usually, which typically 10:02
with the experience of the operators they know -- the 10:02
scan operators would know that the image is bad and it 10:02
would have to be rekeyed and that's what happens. 10:02
Q. In the case of Public Resource did HTC ever receive 10:02
paper documents? 10:02
A. No. 10:02
Q. So HTC was never scanning anything; correct? 10:02
A. No. 10:02
Q. So for Public Resource, did HTC first run an OCR 10:02
software on every image that it received? 10:02
A. I don't know that part whether we ran it on every 10:03
major part of the image, I don't know. 10:03
Q. Would the first step in the work that was done for 10:03
Public Resource ordinarily be running OCR software on 10:03
the image by two operators? 10:03

key or single key, it all depends. 12:19
Q. And if accuracy is the most important consideration, 12:19
then you would use triple key? 12:19
A. Yes. 12:19
Q. Do you know how many characters appear on a common 12:19
page? 12:19
MR. COUTILISH: Objection to the form of 12:19
the question. 12:19
Q. Let me withdraw it. 12:19
On an average page how many characters are 12:19
there? 12:19
MR. COUTILISH: Same objection. What is an 12:19
average page? 12:19
Q. You can answer. 12:19
A. It's about 4,000. 12:19
Q. And if we go back to the error rate or the accuracy 12:19
rate that's identified in Exhibit 2, you told me that 12:19
you'd expect 49 errors in 10,000 based on this 12:19
percentage; right? 12:19
A. Yeah, that's correct. 12:19
Q. And so every two and a half pages approximately, 49 12:19
errors on an average page of 4,000 per page? 12:19
A. Like I said -- 12:19
MR. STOLTZ: Objection to form. 12:20
A. Yeah, like I had said earlier, that is the 12:20

tolerance -- 12:20
Q. Okay. 12:20
A. -- level. 12:20
Q. So that's the level that's still deemed to be acceptable? 12:20
A. That's permissible, yeah. 12:20
Q. Okay. So in a two and a half page document, if it has an average of 4,000 characters per page, you would expect there to be 49 -- or not expect -- 49 mistakes would be within the tolerance? 12:20
A. Yes. 12:20
MR. STOLTZ: Objection to form. 12:20
Q. Do you have any personal knowledge of regarding any efforts to correct problems that were identified by Mr. Malamud? 12:20
MR. COUTILISH: Are you asking him or HTC? 12:20
MR. FEE: I'm just asking what he personally knows. 12:20
MR. COUTILISH: Okay. 12:20
A. I would -- I personally wouldn't know, but in general HTC would always correct errors identified by the clients. 12:20
Q. During the course of your investigation in connection with this deposition, did you learn any information regarding specific instances where any errors were 12:21

EXHIBIT 6

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS, d/b/a ASTM INTERNATIONAL; NATIONAL FIRE PROTECTION ASSOCIATION, INC.; and AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, Plaintiffs and Counter-Defendants, vs. PUBLIC.RESOURCE.ORG,INC., Defendant and Counter-Plaintiff.	) Civil Action No. 1:13-cv-01215-TSC

VIDEOTAPED 30(b)(6) DEPOSITION OF NATIONAL FIRE PROTECTION ASSOCIATION, INC., BY CHRISTIAN DUBAY, before Jeanette N. Maracas, Registered Professional Reporter and Notary Public in and for the Commonwealth of Massachusetts, at 42 Chauncy Street, Boston, Massachusetts, on Wednesday, April 1, 2015, commencing at 10:00 a.m.

PAGES 1 - 250

A. Primarily around the media interviews. 10:26:12
Q. Any other ways? 10:26:15
A. The primary, from a public communications resource outreach aspect, is through media inquiries, media interviews and media responses when I'm requested. 10:26:21 10:26:32 10:26:37 10:26:40
Q. How many media interviews have you given in the past year? 10:26:41 10:26:48
A. I don't know. Approximately ten. 10:26:49
Q. On what subjects? 10:27:02
A. I don't recall. 10:27:06
Q. You don't recall any of the subjects? 10:27:09
A. Not off the top of my head, no, I do not. 10:27:19
Q. You say that NFPA brings together a multitude of interested parties who participate in a consensus process to determine the best level of minimum safety; is that right? 10:27:22 10:28:09 10:28:15 10:28:18
MR. REHN: Object to the form. 10:28:20
A. NFPA has an open consensus standards development process that brings together many differing viewing points of interest, interest categories as well as the public in order to develop our codes and standards. 10:28:24 10:28:27 10:28:32 10:28:35 10:28:39
Q. How does NFPA bring them together? 10:28:43
MR. REHN: Objection as to form. 10:28:51

A. One way is through our technical committee meetings. 10:28:53 10:28:55
Q. How else does NFPA bring them together? 10:29:01
A. Through our annual meeting. 10:29:07
Q. How else? 10:29:10
A. Through special, specially called topical meetings. 10:29:17 10:29:23
Q. How else? 10:29:28
A. Through technical forums and summits. 10:29:29
Q. How else? 10:29:40
A. That's all I can think of off the top of my head. 10:29:41 10:29:57
Q. And what does NFPA do to bring them together? 10:29:57
MR. REHN: Object to the form. 10:30:05
Vague. 10:30:07
A. With respect to our technical committee meetings, we, through the committee, call the meeting and book the meeting facility and host the meeting. 10:30:10 10:30:12 10:30:16 10:30:20
Q. Anything else? 10:30:30
MR. REHN: Same objection. 10:30:32
A. To clarify, with respect to committee meetings? 10:30:35 10:30:37
Q. Yes. 10:30:38
A. We publicly promote them, as all of our 10:30:39

handle all the logistics around that meeting space and any required hotels. 10:32:09 10:32:12

Q. How does NFPA host the meeting? 10:32:14

MR. REHN: Object to the form. 10:32:20

Q. I should say how does NFPA host the meetings? 10:32:24

MR. REHN: Same objection. 10:32:28

A. I think the best approach is that because it's an NFPA meeting, so it's -- we're calling -- when I say we're calling the meeting, so it's our committee meeting as an example. 10:32:29 10:32:31 10:32:36 10:32:37 10:32:41

So NFPA staff is there, technical staff is there facilitating and running the meeting along with the actual volunteer technical committee chair. So I think that should clarify what I'm implying by "hosting." 10:32:41 10:32:46 10:32:48 10:32:50 10:32:54 10:32:56

Q. How does the NFPA staff facilitate and run the meetings along with the technical committee chairs? 10:32:57 10:33:15 10:33:17

A. Again, just to clarify, just focusing on technical committee meetings? 10:33:20 10:33:23

Q. Yes. 10:33:24

A. Okay. We have a technical staff liaison who's assigned to each of our standards and a 10:33:25 10:33:30

portion of their job is to attend the technical committee meetings. 10:33:33 10:33:36

Q. What do the liaisons do at those meetings when they attend them? 10:33:39 10:33:45

MR. REHN: Object to the form. 10:33:45

A. Their primary responsibility is to capture all of the technical changes that the committee is making to the document they're working on or standard they're working on. 10:33:46 10:33:51 10:33:54 10:33:57

Q. What do you mean by technical changes in that context? 10:34:02 10:34:24

A. Our technical committees are responsible for developing changes to our codes and standards. And one of the primary responsibilities of the technical staff liaison is to capture those changes. 10:34:27 10:34:31 10:34:34 10:34:37 10:34:39

Q. In what respect are those changes technical changes? 10:34:46 10:34:50

A. Those changes are specific, technical being scientific or wording changes to our codes and standards which are technical documents. 10:34:53 10:34:57 10:35:01

Q. How do you distinguish between scientific changes and wording changes to the technical documents? 10:35:08 10:35:11 10:35:17

MR. REHN: Object to the form. 10:35:18

committee is trying to accomplish to ensure that when those changes go out for ballot to our technical committees, it's accurate. 10:38:27 10:38:29 10:38:32

Q. That it accurately reflects what the technical committee intended to produce? 10:38:35 10:38:38

A. The primary job -- 10:38:41

MR. REHN: Object to the form. 10:38:43

A. The primary job of the technical staff liaison is to ensure that any recorded actions accurately reflect that intent of the technical committee. 10:38:44 10:38:46 10:38:48 10:38:51

MR. REHN: If I can just remind the witness to give me a chance to object after the question is asked. Helps the court reporter out if we're not talking over each other. 10:38:52 10:38:53 10:38:56 10:39:03 10:39:06

A. Sorry. 10:39:07

Q. You mentioned some sort of the editorial activity in support of the technical committees; is that correct? 10:39:16 10:39:30 10:39:35

MR. REHN: Object to form. 10:39:35

Q. You used the word "editorial." I didn't quite understand the context. 10:39:36 10:39:39

A. There's an extensive amount of support that NFPA staff provides to our standards 10:39:41 10:39:43

development process. A piece of that is, for example, compliance with our manual of style. 10:39:45 10:39:50

Q. What form does that support take? 10:39:57

MR. REHN: Object to the form. 10:40:03

A. It takes several forms. First and foremost is to capture the specific text or record the specific technical changes that occurred at the meeting. 10:40:07 10:40:10 10:40:14 10:40:17

Q. Anything else? 10:40:17

A. Second is to ensure that the wording is in compliance with our manual style. 10:40:26 10:40:32

Q. Anything else? 10:40:39

A. Also the technical staff is there to ensure that the new or modified requirements align with the remainder of the document. 10:40:40 10:40:47 10:40:51

Q. Anything else? 10:40:58

A. They also spend time reviewing those requirements, the technical staff does, to make sure they don't establish conflicting requirements with other portions of that document or other NFPA standards. 10:41:05 10:41:10 10:41:12 10:41:14 10:41:18

Q. Anything else? 10:41:21

A. Another responsibility is to come back to NFPA to their offices and ensure that our editorial production team has full knowledge 10:41:25 10:41:32 10:41:34

1		of those changes as they modify the --	10:41:39
2		develop the next edition of the standard.	10:41:43
3	Q.	Anything else?	10:41:48
4	A.	There's an extensive amount of back and forth	10:42:08
5		between the editorial and production staff	10:42:11
6		and the technical staff to finalize the	10:42:14
7		language prior to balloting.	10:42:18
8	Q.	Anything else?	10:42:27
9	A.	Once the language is finalized, the technical	10:42:31
10		staff works with our project administrators	10:42:37
11		to develop a technical committee ballot which	10:42:41
12		is then circulated to that technical	10:42:44
13		committee.	10:42:44
14	Q.	Anything else?	10:42:51
15	A.	Once the ballot is completed and approved,	10:43:16
16		the technical staff, working with the project	10:43:22
17		administrators, then circulates the ballot of	10:43:23
18		the proposed changes to that full technical	10:43:27
19		committee.	10:43:30
20	Q.	Do they circulate the proposed ballot or	10:43:39
21		the actual ballot to the full technical	10:43:39
22		committee?	10:43:39
23	A.	The actual ballot. The actual ballot is	10:44:03
24		submitted to the committee for formal voting.	10:44:07
25	Q.	Anything else?	10:44:15

Q. Is there anything about the development of standards that the regulations do not cover? 11:16:19 11:16:21

A. Our regulations cover the specific accredited rules and hence, its regulations. We also have our committee officers guide which provides guidance to our technical committee members as well as our chairs and our manual style. 11:16:27 11:16:33 11:16:35 11:16:37 11:16:41 11:16:46

Q. What other documents govern or regulate the development of standards within NFPA? 11:16:46 11:17:44

A. Off the top of my head I can't think of anything else. 11:17:56 11:17:59

Q. Who participates in -- strike that. 11:18:09

Who are the members, generally speaking, the category of NFPA's technical committees? 11:18:17 11:18:20 11:18:26

A. Just for clarification, the representation or are they members of NFPA? We have categories -- we have interest categories of our committee members. 11:18:29 11:18:36 11:18:39 11:18:43

Q. Who -- what persons are entitled to be members of NFPA's technical committees? 11:18:43 11:18:48

MR. REHN: Objection as to form. 11:18:51

A. Anyone can apply to be a member of an NFPA technical committee, and based upon their 11:18:55 11:18:59

expertise and their background, they're evaluated through a process that ultimately involves standards council appointing them to, or not appointing, depending on their credentials, to the various technical committees. 11:19:01 11:19:04 11:19:07 11:19:10 11:19:12 11:19:14

Q. So the standards council determines who gains admission to membership in the technical committees? 11:19:17 11:19:21 11:19:23

A. That's correct. 11:19:24

Q. What criteria does the standards council apply in determining who should gain membership to the technical committees? 11:19:27 11:19:35 11:19:39

MR. REHN: Objection as to form. 11:19:42

A. It's a multipart criteria. First is technical expertise within that subject matter. Second is balance; is the committee an appropriate balance. And third is the ability to participate. 11:19:46 11:19:51 11:19:54 11:20:01 11:20:02

Q. What do you mean by balance? 11:20:06

A. By our regulations, NFPA technical committees are required to have a balance of interest categories to ensure that no one party or one interest category can dominate the process. 11:20:12 11:20:16 11:20:18 11:20:21

Q. What are the interest categories? 11:20:24

A. There are, I believe, nine interest categories, including -- one example is research and testing is an example. Another example is enforcer, which includes government officials, both, sometimes federal but state and local jurisdictions, as well as special expert, which is consultants as an example. 11:20:27 11:20:31 11:20:37 11:20:40 11:20:44 11:20:48 11:20:52 11:20:56

Users, installer maintainers which are those who install the systems, consumers, and that's all I can think of. I'm not sure if I said it, but consumer is another one that can represent a special -- have a specific slot. Oh, I'm sorry, one other slot is labor, is another slot. 11:20:56 11:21:02 11:21:13 11:21:30 11:21:34 11:21:35 11:21:38

Q. Thank you. Are all NFPA employees members of the technical committees? 11:21:51 11:22:16

MR. REHN: Objection as to form. 11:22:20

A. NFPA employees are not -- cannot be members of our technical committees. However, as I stated previously, it's important -- there's an important role that NFPA staff plays in guiding, advising the committee, coordinating the activities and providing their technical expertise, especially technical staff liaison 11:22:23 11:22:27 11:22:30 11:22:32 11:22:35 11:22:37 11:22:40

How are persons chosen to serve on the standards council? 11:24:06 11:24:08

MR. REHN: Object to the form. 11:24:12

A. Because the standards council is the overarching body over our entire standards development process, they are appointed through a process that involves the NFPA president making recommendations to the NFPA board of directors. Ultimately the standards council members are appointed by our board of directors. 11:24:15 11:24:18 11:24:21 11:24:24 11:24:27 11:24:29 11:24:33 11:24:35

Q. Are any NFPA employees members of the standards council? 11:24:40 11:24:43

MR. REHN: Objection as to form. 11:24:45

A. Specifically, no. However, similar to the technical committees, there is staff assigned to support the standards council, their activities and their decisions. 11:24:49 11:24:51 11:24:55 11:24:58

Q. I'd like to go back for a moment to the process after the technical committee has decided on changes to a standard. 11:25:11 11:25:19 11:25:26

And you say that a staff representative, NFPA staff representative will capture those changes from the technical committee, correct? 11:25:31 11:25:38 11:25:41 11:25:44

MR. REHN: Object to the form. 11:25:48

A. The NFPA technical staff that serves as, the term we use is a staff liaison to a technical committee, they do more than just capture the specific wordings. 11:25:50 11:25:54 11:25:56 11:26:00

What they do is they are each technical experts in their field and they not only capture or record those changes, but they provide their expertise to the committee, their field experience, what they have, the information that they're bringing in through questions on the standards and such. 11:26:01 11:26:03 11:26:06 11:26:09 11:26:11 11:26:14 11:26:16 11:26:18

And they provide that technical expertise to the committee so the committee can utilize that, a complete combination with all the public input or comments, to land on a final set of proposed language. In summary, it's more than just recording. They're not really recording secretaries, per se. 11:26:19 11:26:21 11:26:24 11:26:27 11:26:32 11:26:37 11:26:39 11:26:43

Q. But who ultimately determines the language of the technical committee's proposed changes to a code or standard? 11:26:43 11:26:47 11:26:51

MR. REHN: Objection as to form. 11:26:53

It's ambiguous. 11:26:54

A. The final decision is accomplished through that ballot of the technical committee, but the wording itself is that combination of the technical staff and the committee working to capture the requirement and get it worded properly in the right context, in the right order within a document so that when the final specific words are balloted, the committee has it in context of the whole standards and they can make that decision, seeing it within the body of the standard. 11:26:56 11:26:58 11:27:01 11:27:05 11:27:07 11:27:09 11:27:12 11:27:14 11:27:18 11:27:20 11:27:22

Q. When the text is balloted, is there any indication to the members of the committee what variations have occurred as a consequence of staff input from the text that the committee itself was proposing? 11:27:24 11:27:27 11:27:32 11:27:38 11:27:43

MR. REHN: Objection as to form. Vague. Lacks foundation. Assumes facts not in evidence. 11:27:47 11:27:48 11:27:51

A. There are really two types of changes the committee is balloted on. One is the -- a plain first revision or second revision, which may have been edited to comply with our manual style, get the wording right. That is 11:27:53 11:27:57 11:28:01 11:28:04 11:28:07

system, so there would not be a first or second draft report. There would be a report on proposals and a report on comments. 11:31:14 11:31:17 11:31:23

Q. Does either of those reports show what changes in text may have been contributed by technical staff, technical committee liaisons? 11:31:26 11:31:30 11:31:33 11:31:38

A. All of the changes in our old system were contained within the proposals and action on proposals and comment and actions on comments, so, in some cases, they may have been called out on the report and in some cases not. 11:31:41 11:31:45 11:31:48 11:31:50 11:31:53 11:31:56

Ultimately, all of them had been balloted through the technical committees. Whatever you see in the report on proposals are comments that had gone through the committee process. 11:31:57 11:31:58 11:32:01 11:32:03 11:32:05

Q. I'm trying to understand how one can ascertain what, if any, text in any code or standard has been contributed by NFPA technical staff. 11:32:05 11:32:08 11:32:17 11:32:21

MR. REHN: Objection as to form, and the compound nature of the question. 11:32:26 11:32:29

Q. Please tell me how one can ascertain that. 11:32:31

MR. REHN: Same objection. 11:32:34

A. What I can say about when you look at the wording of a standard, what's been added or worked on by technical staff is, any changes, any text that has been modified in the document has been worked on by technical staff, has been modified, been adjusted to fit the form of our manual style as well as to be consistently worded with the technical body of the standard. 11:32:36 11:32:39 11:32:42 11:32:45 11:32:47 11:32:49 11:32:54 11:32:57 11:32:59

So each and every change has been clarified or worked on by technical staff to get it ready for committee ballot. So there's an extensive amount of time. The NEC is an excellent example of the NFPA staff get it worded correctly and in proper format, style and technical comments to be balloted by the technical committee. 11:33:01 11:33:06 11:33:09 11:33:11 11:33:15 11:33:18 11:33:23 11:33:28

Q. Where can one detect what changes -- you used the word "worked on," for example. That's a little vague in this context. I would like to know how one can identify any text contributed by technical committee staff liaison in any NFPA code or standard. 11:33:28 11:33:33 11:33:36 11:33:38 11:33:42 11:33:48

MR. REHN: Objection as to form. 11:33:54

It's ambiguous. It's compound. 11:33:55

A. Because -- how can I explain. Because 11:34:03
ultimately the final text, the changes are 11:34:06
balloted by the technical committee, 11:34:10
oftentimes the staff's work on that text is 11:34:12
contained within the same wording that's 11:34:15
being balloted, the ultimate wording that's 11:34:17
balloted by the committee. 11:34:20

So in our old system, that was 11:34:21
all -- when you see a change in the document, 11:34:22
you can know, and that's why I had my 11:34:24
previous answer, that staff was involved in 11:34:26
that process. 11:34:28

In the new process that happens with 11:34:30
every revision, every revision staff is 11:34:31
involved in and worked on and more or less 11:34:35
touched, modified, cleaned up to get it ready 11:34:37
for balloting. 11:34:40

There's also an additional level in 11:34:41
our new process of editorial revisions so 11:34:42
that it's clear to the committee that this is 11:34:47
something that is not directly tied but it is 11:34:48
because of another technical change. So it's 11:34:52
just slightly different. 11:34:54

But I can say clearly, if you see a 11:34:56

revision to the document or a change, for example, to the 2008 NEC, that text has been worked on by editorial production, technical expertise of the staff liaisons on that project. That's their job. 11:34:57 11:35:00 11:35:05 11:35:07 11:35:11

Q. But I'm not asking about what the technical staff have worked on because they may have worked on language that may have come from the 2005 NEC that has survived into the 2008, 2011, 2014. I'm asking how does one identify any text contributed by a technical committee staff liaison in any code or standard of NEC? 11:35:14 11:35:16 11:35:20 11:35:22 11:35:29 11:35:34 11:35:41

MR. REHN: Objection as to form. That's ambiguous. It's compound. 11:35:45 11:35:48

A. Again, to further try to clarify this is if the text was in a previous edition of the document and moved forward, it would not show an indication of being modified. But wherever there is new text added, deleted or modified, there's an indication in the margin or shading, in the case of NEC, that shows that text has been modified, worked on, whatever. 11:35:52 11:35:57 11:36:00 11:36:03 11:36:06 11:36:09 11:36:11 11:36:15 11:36:18

And those words can come from lots of places. And the technical staff is 11:36:18 11:36:20

go -- strike that. 11:40:50

If you needed to identify the 11:40:53

language that NFPA employees contributed to 11:40:55

NFPA codes and standards, how would you 11:41:05

determine that language? 11:41:07

MR. REHN: Objection as to form. 11:41:10

It's vague and compound. 11:41:11

A. What we could determine is the language the 11:41:15

technical committee at the end of the day 11:41:19

approved. Into -- each individual word and 11:41:21

such would be difficult, if not impossible, 11:41:25

because of ultimately the technical staff 11:41:30

provides that content to the committee which 11:41:33

then approves those words. 11:41:35

Q. You said the technical staff provides the 11:41:37

content to the committee? The technical 11:41:44

staff doesn't draft the standards, correct? 11:41:47

MR. REHN: Objection as to form. 11:41:51

Mischaracterizes. 11:41:53

A. In many cases the technical staff in the room 11:41:59

is drafting the text. 11:42:02

Q. Is proposing new text? 11:42:04

A. In some cases yes, to accomplish what the 11:42:10

committee is trying to accomplish. The 11:42:13

technical staff of NFPA are experts in their 11:42:15

field, and the committee may want to establish a requirement for X and the technical staff is there saying, well, we can word it this way and that way, does this meet your intent, how about we do this, I can research some information, get back to you at the next meeting. 11:42:20 11:42:23 11:42:24 11:42:27 11:42:29 11:42:30 11:42:32

The technical staff provides a vital role in helping the technical committee accomplish their mission of developing those words that become ultimately the final words of the standard. 11:42:33 11:42:35 11:42:38 11:42:40 11:42:43

Q. Who makes the decision about the words in a standard? 11:42:44 11:42:46

MR. REHN: Objection as to form. Ambiguous. 11:42:46 11:42:48

A. The final decision is -- and to summarize, it's a two-part decision. A committee ballots on it, the ballot's on the final word, the committee approves it. At the end of the day our standards council issues that document, but the committee ballot establishes the position of the type of committee at that time. 11:42:49 11:42:54 11:42:55 11:42:58 11:43:00 11:43:03 11:43:03 11:43:07

Q. And how does the text evolve up to the point 11:43:07

that the text of the technical committee is balloted? 11:43:16 11:43:19

MR. REHN: Objection as to form. Ambiguous. Compound. 11:43:20 11:43:22

A. The text can evolve and by evolve, you mean created and included? Is that what you're saying? 11:43:25 11:43:28 11:43:31

Q. I think so. 11:43:32

A. So in a few ways. One is it can be submitted through a proposal form or public input form or a public comment form. The language can come from that. It can come from the expertise of the technical committee members who are sitting on the committee, or it can come from technical staff providing that to the committee as their work progresses along. 11:43:33 11:43:37 11:43:45 11:43:49 11:43:53 11:43:55 11:43:58 11:44:01

Ultimately that evolution is the staff liaison synthesizes all that with the direction of the committee to land on the final technical language that is balloted. 11:44:06 11:44:08 11:44:13 11:44:15

Q. With the direction of the committee, meaning with the approval of the committee members? 11:44:18 11:44:29

MR. REHN: Objection as to form. Mischaracterizes the testimony. 11:44:31 11:44:34

Q. What do you mean by with the direction of the 11:44:36

committee? 11:44:38

A. So a committee could want to establish a requirement again for X for something and they may say, we want the requirement to read 12 and the staff liaison would have to put text around that to get it to read in context of the document. Or they may say we want to have a draft chapter on something, technical staff can you do research, pull together drafting of documents to present to the committee to consider. 11:44:40 11:44:45 11:44:48 11:44:51 11:44:55 11:44:57 11:45:00 11:45:03 11:45:12 11:45:14

In the end the committee will agree through a meeting vote what text is going to move forward towards ballot. Then the staff's job is to turn that into a ballot and make sure it fits to our manual style and ballot with the technical committee on the final language. 11:45:16 11:45:19 11:45:21 11:45:24 11:45:28 11:45:28 11:45:31

Q. What criteria do technical committees use to determine what text moves forward to a ballot? 11:45:31 11:45:34 11:45:37

MR. REHN: Objection as to form. 11:45:38

A. It's their expertise. It's their professional opinion in a balanced way through a meeting vote of what they believe 11:45:42 11:45:46 11:45:48

A. No. There's no place on our form to indicate what category you are applying to. That's ultimately the decision of our standards council. 12:48:27 12:48:46 12:48:50 12:48:52

Q. Do you see on the third page of Exhibit 1231, the page ending 38520, there's no assigned -- copyright assignment language on this, correct? 12:48:52 12:48:59 12:49:10 12:49:14

MR. REHN: Object to the form. Mischaracterizes the document. Calls for a legal opinion. 12:49:15 12:49:17 12:49:19

A. Each and every committee member participates in the NFPA process with the full understanding that the material that they're developing is the intellectual property of NFPA. And that has been that way for as long as I've been involved in NFPA and as part of the application process as well as we have a policy that we verify each and every public input public comment proposal that comes in that that has happened. 12:49:23 12:49:26 12:49:28 12:49:30 12:49:33 12:49:36 12:49:38 12:49:42 12:49:44 12:49:47

Q. Do you understand what a work-made-for-hire is? 12:49:51 12:49:55

MR. REHN: Object to the form. Calls for a legal opinion. 12:49:55 12:49:56

Q. That's a yes, then? 03:00:28
A. Yes, it does look typical. 03:00:29
Q. It appears that this document lacks a signature. I gather that NFPA would accept proposals like this that lacked signatures; is that correct? 03:00:39 03:00:42 03:00:46 03:00:50
MR. REHN: Object to the form. 03:00:50
A. We have a policy in place to not accept any proposals, comments, public inputs or public comments in our new process without the appropriate copyright transfer. In my personal opinion, I note that it's an -- it appears to be a Word file and many times we would get individuals would submit large numbers of proposals and comments with a cover sheet having a signature applying to all of them. 03:00:52 03:00:54 03:00:57 03:00:59 03:01:02 03:01:04 03:01:07 03:01:10 03:01:13 03:01:15
And this may be that case, but I'm speculating on that point. But we have a strict policy in place to review each policy for signature. 03:01:18 03:01:20 03:01:22 03:01:26
Q. Because it's important to NFPA to get a signature to Point 5 on this document; is that correct? 03:01:26 03:01:29 03:01:34
MR. REHN: Object to the form. 03:01:34

A. We have a policy in place, and the importance of that policy is to verify each and every public input, public comment and under the old system, proposal that a signature was provided on any and all submissions. 03:01:39 03:01:42 03:01:45 03:01:48 03:01:51

Q. My question was whether it was important to get that for Paragraph 5? 03:01:54 03:01:56

MR. REHN: Object to the form. Asked and answered. 03:02:00 03:02:03

A. Historically, for my team, it was important because we had a policy in place to the point that we had full-time staff assigned to that one task. And during times of heavy volumes, we would assign multiple staff to that specific task. 03:02:05 03:02:11 03:02:13 03:02:15 03:02:18 03:02:21

(Exhibit 1247 marked for identification.) 03:03:06 03:03:41

Q. I've handed you Exhibit 1247. Do you recognize this as a document that NFPA maintains in the ordinary course of business as part of the standard development process? 03:03:41 03:03:53 03:03:55 03:04:00

A. Yes, this form does look typical, Exhibit 1247. 03:04:08 03:04:11

Q. This was a non-electrical form, but the sender indicated it was for the National 03:04:11 03:04:14

off the record. 05:38:17
VIDEOGRAPHER: The time is 5:38. 05:38:17
This is the end of Tape No. 3, and we are now 05:38:19
off the record. 05:38:22
(Break taken) 05:38:25
VIDEOGRAPHER: The time is 5:53. 05:53:03
This is the beginning of Tape No. 4, and we 05:53:15
are now back on the record. 05:53:17
BY MR. BRIDGES: 05:53:20
Q. Mr. Dubay, you mentioned earlier that NFPA's 05:53:20
staff check each of these proposal and 05:53:26
comment forms when they are submitted to look 05:53:34
for signatures on the copyright language and 05:53:42
indications as to whether the material is 05:53:46
original or comes from another source; is 05:53:48
that correct? 05:53:52
A. We have a policy that each and every 05:53:53
proposal, public input or comment is reviewed 05:53:57
for completeness being signature, copyright 05:53:59
release as well as any attached materials for 05:54:03
potential copyright with those as well. 05:54:08
Q. How many proposals, communications with 05:54:11
public input or comments, falling in the 05:54:20
categories you just mentioned, does NFPA 05:54:26
receive each year? 05:54:29

EXHIBIT 7

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS d/b/a ASTM INTERNATIONAL; NATIONAL FIRE PROTECTION ASSOCIATION, INC.; and AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC., Plaintiffs, vs. PUBLIC.RESOURCE.ORG, INC., Defendant. AND RELATED COUNTERCLAIMS.	Case No. 1:13-cv-01215-EGS

RULE 30(B)(6) VIDEOTAPED DEPOSITION OF AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.

BY AND THROUGH ITS DESIGNEE,

STEPHANIE REINICHE

MONDAY, MARCH 30, 2015
9:10 a.m.

VERITEXT LEGAL SOLUTIONS
1075 PEACHTREE STREET
SUITE 3625
ATLANTA, GEORGIA

Reported By:
SHARON A. GABRIELLI, CCR B-2002
Job No. 2035289

knowledge, it's the -- the requirement is all states are supposed to become compliant with it or deem to comply by another method every so many years to the latest version of 90.1. 09:45 09:48 09:43 09:49 09:41

Q (BY MR. BECKER) When you say that all states must become compliant, does that mean that the states have to adopt this into their regulations or does it mean that these states have to build their buildings to comply with the EPAct? 09:45 09:47 09:40 09:45 09:49

MR. CUNNINGHAM: Object to form. 09:41

THE WITNESS: It means they're supposed to adopt a code that is equivalent to the current version of 90.1 within two -- I believe it's within two years of each year, or there is some other rules that they have to follow if they don't deem to comply. 09:43 09:45 09:48 09:41 09:45 09:48

It does not have to be 90.1. It could be another version of a different code. So... 09:42 09:44 09:47

Q (BY MR. BECKER) What other codes would -- would suffice to -- to satisfy the EPAct? 09:45 09:40

MR. CUNNINGHAM: Object to form. 09:44

THE WITNESS: The IECC. 09:47

Q (BY MR. BECKER) What is the IECC? 09:40

A International Energy -- I'm not positive. I just speak in acronyms, so I can't remember. I have to look it up, to be honest. But it's through International Code Council. It's their energy efficiency code. 09:44 09:49 09:42 09:47 09:42

Q The International Code Council, are they known as ICC? 09:46 09:48

A Yes. 09:40

Q What's the -- is there any relationship of the IECC to ASHRAE's Standard 90.1? 09:44 09:47

A 90.1 is a compliance option to the IECC. 09:43

Q What does that mean? 09:42

A It means you can choose -- if you adopt that as your code and you adopt it in its entirety and then -- and 90.1 is a reference as a compliance option at the -- whatever level you're -- design your code -- wherever that code is adopted, if they -- if the builder wants to build according to what's in 90.1, they have that option or they can build according to the IECC, and then that's their choice. 09:44 09:49 09:43 09:49 09:43 09:46 09:49 09:42

Q Does the IECC say within it that someone can comply with ASHRAE Standard 90.1 and that would be sufficient? 09:41 09:47 09:40

MR. CUNNINGHAM: Object to form. 09:41

THE WITNESS: It -- there is a reference 09:43

that are assigned to other managers in the department? 09:47
A We just -- we just split them up because 09:41
of staff loads. One person can't support them based on 09:44
their meeting schedules; one person can't do all of 09:40
them. Some of them, it's based on their prior 09:43
expertise. 09:47
Q And do you know what standards they are that 09:49
are not assigned to Mark Weber that are American 09:41
standards? 09:45
A Yes. 09:45
Q And which standards are those? 09:46
A 90.1, 90.2, 90.4, 189.1, 15, 34. 09:49
Q And who is Standard 90.1 assigned to? 09:53
A Steve Ferguson. 09:59
Q And you say that Steve Ferguson reports to 09:50
you as well? 09:53
A Yes. 09:54
Q And what is Steve Ferguson's position? 09:55
A Manager of standards for codes. 09:58
Q And he's also the staff liaison for 90.1, you 09:56
were saying? 09:51
A Yes. 09:51
Q Okay. What does Mr. Ferguson do as staff 09:54
liaison for 90.1? 09:57
A A lot of things. He'll -- he does -- he'll 09:59

do a double review of the membership items reviewed by Katrina, works with the project committee chair to help come up with a balance committee, looking at terms, you know, helping making sure they, you know, get -- rotate people in and out per our rules. He attends all the full project committee meetings, some of the subcommittee meetings. 09:53 09:58 09:54 09:59 09:52 09:59 09:52

He processes the letter ballots for approval of all drafts. He reviews the drafts to make sure they're written consistently. He points out conflicts when they make one change to a section and then they haven't made a similar change to another section so there's not conflicts. 09:55 09:57 09:52 09:56 09:58 09:53

He reviews all of the public -- final publication drafts in the final roll-ups of the 90.1 for each new version every three years. He does the minutes. 09:55 09:58 09:53 09:57

Q Are you aware of any other work that Mr. Ferguson does as the staff liaison for 90.1? 09:53 09:55

A That's -- that's pretty much the general stuff that I can think of. He has other duties besides 90.1. 09:51 09:54 09:57

Q Does Mr. Ferguson draft any of the text for 90.1? 09:58 09:53

A He reviews the drafts and points out 09:54

conflicts. 09:57

Q But he doesn't contribute text directly to 09:57
90.1? 09:51

A No. He may comment when they're discussing 09:52
proposed text changes to make them aware of something, 09:56
but he does not necessarily, unless they wrote 09:50
something in the incorrect format. 09:53

Q And what would he do if they had written 09:56
something in an incorrect format? 09:58

A He would edit it, send it back. If it's a 09:50
substantive change to fix it, then it would have to go 09:53
back to the committee for a new vote. If it's 09:56
editorial, then the chair or a subcommittee -- or in 09:59
consultation with a subcommittee chair can say that's 09:54
correct and -- and then move it forward in whatever 09:58
step in the process it's in. 09:50

Q When you say he edits it and sends it back, 09:51
does that mean that he actually changes the text, or 09:54
does this mean that he sends a comment that there is a 09:56
conflict or something like that and leaves it to the 09:50
committee to make the change? 09:52

A If it's -- it depends. If it's a conflict 09:54
and he understands -- he has an engineering degree, so 09:57
if he understands how to change it, he can propose a -- 09:51
he may propose the wording change. If it's not 09:55

something he understands and it's a conflict, then he'll comment and ask the committee for direction. 09:50 09:53

Q And is there any record of the wording changes that Mr. Ferguson has proposed? 09:53 09:56

A There's probably -- if he sent something back, it -- to the committee, it would have been sent via email. 09:52 09:54 09:58

Q If you wanted to go back and find any proposed changes that Mr. Ferguson had made, how would you go about doing that? 09:51 09:57 09:51

A I'd have to look in his email. He wouldn't have proposed them in the minutes. That's not something recorded in the minutes, so he would have sent it via email. 09:52 09:55 09:57 09:59

Q And how would that -- would that change be reflected in the minutes in -- in any way? 09:52 09:54

A Not -- not unless it was -- if he sent a change back, this assumes that the committee has already approved the proposed change. And if there was an issue and he sent it back, then if -- if a change had to be made that was substantive, there would be another -- there would be a letter ballot. So then it would be reflected in a letter ballot. If it's editorial, the chair would accept it. 09:58 09:54 09:57 09:59 09:54 09:57 09:51 09:54

Q Who makes the determination for a substantive 09:59

Q And the -- who drafts the title, purpose and scope? 13:03 13:07

A The title, purpose and scope can be -- a new one can be submitted by anyone. I could submit one; you could submit one. The technical committee within ASHRAE is usually how it's submitted. 13:02 13:05 13:07 13:01

Q And is the technical committee, are they volunteers or are they employees of ASHRAE? 13:02 13:07

A Volunteers. 13:00

Q And the project committee as well is volunteers, correct? 13:01 13:03

A That's correct. 13:04

Q How are ASHRAE employees involved in the creation and maintenance of ASHRAE Standard 90.1? 13:01 13:05

A In the -- are you talking from now or are you talking about when it was first started? 13:01 13:04

Q Let's -- let's go from when it first started until now. 13:07 13:09

A So when the title, purpose and scope would have been proposed, a staff member would -- would review that to make sure it's in the correct format and, if there is some questions, would actually send it back to whoever had proposed it to make -- to correct it or say if they're okay, if we met their intent, and then send it forward to -- it probably when -- 19 -- 13:01 13:03 13:05 13:09 13:01 13:05 13:09

90.1 was developed in, I think, 1975. They probably didn't have all the subcommittees that we have now, but would have went through the approving bodies up through the board that way. 13:05 13:01 13:04 13:07

Q And would there have been a project committee as well for -- for the original 90.1? 13:07 13:09

A Yes. 13:01

Q And during that process, did staff members draft any of the text for 90.1? 13:09 13:15

A From the beginning? 13:10

Q Yeah. 13:12

A Not unless they were making the edits to -- because of conformity and -- or conflicts or things like that. 13:13 13:16 13:19

Q And would staff members have contributed any text to subsequent versions of 90.1? 13:12 13:18

A In the same way, either in the discussions, if there's a conflict or stuff doesn't -- or through the editing and review of the material. 13:10 13:13 13:17

Q And does ASHRAE have any record of that? 13:12

A If it was done -- it would have been done via email, at the time email started. 90.1 started before the Internet, so if the -- if -- if the records still existed, it would have been in paper format. 13:17 13:10 13:15 13:10

Q What is ASHRAE's purpose in creating these 13:11

A No. 14:00
Q What -- what does it mean, then? 14:01
A It means -- because the IECC uses 90.1 as 14:03
a -- as a compliance option, if the state or 14:06
jurisdiction adopted it and left that requirement in 14:01
and did not change it, then that -- that particular 14:04
state or jurisdiction could use 90.1. 14:09
Q And on page 6, what's marked ASHRAE0003500 14:13
titled "Challenges to Adoption," it says, "Cost of the 14:13
standard," then subpoint, "Revenue objectives are 14:17
antithetical to widespread adoption." 14:11
Do you know what that statement was in 14:14
reference to? 14:15
A That people don't want to have to pay for the 14:18
standard, is my guess, or they think the cost of the 14:12
standard is too high. 14:14
Q Has ASHRAE received comments or complaints 14:17
that the cost of the -- the Standard 90.1 is too high? 14:10
MR. CUNNINGHAM: I'm going to object to 14:14
the scope. 14:16
THE WITNESS: That would have been 14:17
something that Steve Comstock would have 14:18
known. He's the one that deals with the 14:10
standards and the cost. 14:14
Q (BY MR. BECKER) Are you personally aware of 14:15

any instances where individuals have complained about the cost of -- of the -- the 90.1 standard being too high? 14:17 14:11 14:16

MR. CUNNINGHAM: Object to the scope again. Ms. Reiniche is not being deposed in her personal capacity. 14:16 14:17 14:10

THE WITNESS: No, I'm not. 14:13

Q (BY MR. BECKER) Two pages after that, on ASHRAE003502, it says, "Some recognized risks." And then in the middle of that page, it says, "Code proposals that are more stringent than 90.1 viewed as a significant risk to our standing in the marketplace. Others are not passive." 14:13 14:16 14:11 14:13 14:19 14:12

Do you know what that refers to? 14:14

A That means that there's been code proposals submitted to -- to the IECC that are more stringent than 90.1. 14:10 14:13 14:18

Q Do you know how ASHRAE responded to this perceived risk that there were code proposals submitted that were more stringent than 90.1? 14:17 14:12 14:15

A If a code proposal that was submitted was more stringent than 90.1, then ASHRAE would have spoke most likely against that proposal, depending on -- there's a lot of factors that that would have been dependent on. It would have depended on what part, 14:10 14:13 14:18 14:14 14:17

include ASHRAE. 17:44

And sent it to -- purportedly sent it to media, Congress, Federal Trade Commission, including salaries of the CSOs of those organizations, and then indicating that they're going to post those online on May 1st. 17:46 17:41 17:44 17:48 17:40 17:44

Appears a member of the board responded back to Jeff asking why ASHRAE standards aren't included, and Jeff reported back that he -- he doesn't know, but right now they're happy to let someone else fight the battle since we're not included. 17:46 17:40 17:43 17:46 17:49 17:42

Q (BY MR. BECKER) And this is in March 2012, correct? 17:50 17:54

A Correct. 17:55

Q So ASHRAE was at the very least aware of Public Resource in March of 2012, correct? 17:56 17:52

A Correct. 17:56

Q And Mr. Littleton says at the top of the page in the middle of the paragraph, "Developing standards, particularly those that are adopted into law, takes time and resources that someone must underwrite." 17:52 17:56 17:59 17:52

Can you tell me about the time and resources that are required to develop standards? 17:58 17:52

A For 90.1, I would say it's another full-time job for the volunteers that work on that, with the amount of hours they spend on subcommittee calls where they're drafting the -- where smaller groups are drafting it based on the expertise of the different chapters within 90.1, in addition to meeting four times a -- four times a year face-to-face, full subcommittee, full project committee members -- meetings for four days straight from 8 in the morning until 10 at night. It's a huge time commitment for those volunteers. 17:56 17:59 17:51 17:55 17:58 17:50 17:55 17:59 17:52 17:55

Q And he says, "particularly those that are adopted into law." Why is it particularly those that are adopted into law that take time and resources? 17:53 17:57 17:52

A Because usually when it's something that's going to be adopted into law and it's going to be a major change, it -- it generates a lot of comments, not just one or two, talking 50 to a hundred lengthy comments, because people in -- in the industry have different opinions and the committee has to listen to those, look at the -- whatever technical justification they submit, determine if -- if what they're submitting is cost justified, looking at, you know, what the change would do, and if that's truly what's being done in the industry. 17:57 17:59 17:52 17:56 17:52 17:55 17:58 17:51 17:56 17:50 17:53

So what -- the more significant the change, 17:54

the longer it takes to get something through the standards development process. 17:56 17:58

Q And are there other reasons why the standards that are adopted into law would take greater time and resources? 17:52 17:55 17:53

A I suppose that when you're -- if you define laws including the codes, then there's the time it takes to present those changes to the code, to the testimony. Again, that's almost another full-time job, the amount of time people spend at those code hearings, talking about the issues. 17:57 17:50 17:54 17:57 17:51 17:55

Q And are those code hearings before governmental bodies? 17:50 17:52

A They're by code bodies. 17:53

Q Code bodies. And what do you mean by "code bodies"? 17:54 17:56

A International Code Council, NFPA, IATMO. 17:57

Q Does that also include time and resources spent working with government officials? 17:52 17:58

A It could, if it's going into federal regulations or federal law. 17:52 17:54

Q Would it also include time and resources when it's going into state regulations or state law? 17:58 17:51

A Yes, if -- if people are aware it's -- it's happening. 17:55 17:58

EXHIBIT 8

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS d/b/a ASTM INTERNATIONAL; NATIONAL FIRE PROTECTION ASSOCIATION, INC.,; and AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.

Plaintiffs,

vs.

PUBLIC.RESOURCE.ORG, INC.,

Defendant.

CIVIL ACTION FILE
NO. 1:13-CV-01215-EGS

30(b)(6) VIDEOTAPED DEPOSITION OF
STEVEN COMSTOCK
March 5, 2015
10:20 a.m.
1075 Peachtree Street
Suite 3625
Atlanta, Georgia 30309

Lee Ann Barnes, CCR-1852, RPR, CRR

PAGES 1 - 199

90.1 in the 2010 edition, whether that is by physical copy sale, whether it's by bundled or value-added sale, whether it's by license, whether it's by some subscription or network license, but I'm omitting from this question the free reading facility.

MR. LEWIS: Object to form.

THE WITNESS: That would be pure conje- -- I -- I do not know.

Q. (By Mr. Bridges) What -- is there a standard retail price for the current version of ASHRAE 90.1?

A. Yes, there is.

Q. How much is that?

A. That's what I'm -- I believe the ASHRAE member price for the current edition of standard 90.1 is $99. I believe the list price is $120. Typically, our member discount is 15 percent.

Q. Does ASHRAE have a figure of -- strike that.

Does ASHRAE have an understanding of the approximate revenue that it has gained from the sale or licensing, direct or indirect, of the ASHRAE 90.1 standard?

A. We would have the information that would represent the revenue from the copies that we sell.

ASHRAE home page.

Secondly would be if they con- -- if they just contact ASHRAE in -- in general.

Q. And if -- are there any other ways that you're aware of?

A. No, just those two.

Q. If someone contacts ASHRAE in general, is it my understanding, based on your testimony earlier, that the person contacting ASHRAE is likely to be directed to your assistant?

A. That is correct.

Q. And your assistant would typically act as some kind of interface between ASHRAE and whoever's seeking the permission?

A. That is correct.

Q. Who besides yourself would direct your assistant in connection with the assistant's handling the requests for permission?

A. I would be the only person who would be giving her that direction.

Q. I also want to review systematically some of the information that I've heard today about sources other than ASHRAE for ASHRAE standards.

So to begin with, ASHRAE makes its standards available through the Web to persons who

want to view or acquire the standards through the Web interface, whether by using the free viewing facility or by ordering a PDF or ordering a CD; is that correct?

A. That is correct, or a book.

Q. If somebody wants networked access to ASHRAE's standards, that person normally goes through a reseller; is that correct?

A. That is correct.

Q. And you identified several resellers earlier today; correct?

A. That is correct.

Q. Are there any other significant resellers apart from the four you mentioned who resell ASHRAE's standards?

A. I don't -- significant sellers, the only other ones that come to mind, SAI Global -- I don't believe I referenced them, and Barber Index would be -- would be -- I think that may be six then. Those are the principal resellers.

Q. And then apart from them, there may be book retailers?

A. (Witness nodded head affirmatively.)

MR. LEWIS: You have to --

THE WITNESS: Yes.

Q. (By Mr. Bridges) What other major sources of AST- -- sorry, of ASHRAE standards other than ASHRAE have I missed?

A. When you say "sources," sources that make our documents available in the marketplace?

Q. Right, right. What I would consider to be a source to which a member of the public would go in order to obtain ASHRAE standards.

A. I know we have publications in Amazon, for example. I don't know if -- offhand, I can't recall if among the titles they offer are standards, but I would think it's likely that they would be.

Q. Any others that we haven't reviewed?

A. There's an assortment of small book redistributors, Engineer's Bookstore over at Georgia Tech, for example, Barnes & Noble, which does college bookstores. They may maintain inventory of ASHRAE standards for resale.

Q. Do college students get a discount on the price of AS- -- of ASHRAE standards?

A. We have a student member price that is available to student members of ASHRAE.

Q. And do members have to purchase standards through ASHRAE's website in order to take advantage of member discount?

EXHIBIT 9

PUBLIC.RESOURCE.ORG ~ *A Nonprofit Corporation*

Public Works for a Better Government

April 1, 2015

VIA EMAIL AND FIRST CLASS MAIL

FOIA Requester Service Center
US Consumer Product Safety Commission
4330 East West Highway, Room 820
Bethesda, MD 20814
E-mail: cpsc-foia@cpsc.gov

RE: Freedom of Information Act Request

Dear FOIA Officer:

On behalf of Public.Resource.Org, and pursuant to the Freedom of Information Act, 5 U.S.C. § 552, I request a copy of *ASTM F 1447-94, Standard Specification for Protective Headgear Used in Bicycling 1994 Edition* which is incorporated by reference in 16 CFR 1203.53(b) and used in 16 CFR 1203.53(a).

Please provide the record in electronic form if possible.

If it is your position that *ASTM F 1447-94* (or portions thereof) is exempt from disclosure, please state the basis of the denial of each portion of the record withheld. In addition, please provide the nonexempt portions of the record.

Public.Resource.Org requests that all fees in connection with this FOIA request be waived in accordance with 5 U.S.C. § 552(a)(4)(A)(iii), because it does not seek the records for a commercial purpose and disclosure "is in the public interest because it is likely to contribute significantly to public understanding of the operations and activities of the government." Because it was incorporated by reference into the Code of Federal Regulations, the requested record is part of the agency's governing law. Accordingly, it is the essence of the "operations and activities of the government." However, because it is not published in the Federal Register, the public does not have the same access to it that it has to other parts of the agency's regulations. Disclosure of the record will allow the public to gain knowledge about what is included in the agency's binding law.

Public.Resource.Org does not have a commercial interest in the requested record. Public.Resource.Org is a 501(c)(3) public charity chartered to make government information more broadly available without fee to any and all users. Public.Resource.Org has demonstrated an ability to disseminate information about the government and its activities to the public. It is one of the largest distribution

sites for public information related to the U.S. government, including over 14,000 hours of video from Congressional hearings posted at the request of the Speaker of the House, over 8 million Form 990 reports filed with the Internal Revenue Service, over 6,000 U.S. government videos posted in cooperation with the Archivist of the United States, and the historical opinions of the U.S. Court of Appeals. As the President of Public.Resource.Org, I am frequently quoted in major media publications such as the New York Times, Business Week, the New Republic, and the Washington Post. I also testify before Congress on issues of public access to government information and am a frequent public speaker on the subject.

Accordingly, we request that you waive all fees for locating and duplicating the requested record. If, however, a waiver is not granted, and if the fees to be assessed in connection with this request exceed $200, please obtain my approval before any such costs are incurred.

We will expect a response within 20 working days as provided by law. If you have any questions regarding this request, please contact me at (707) 827-7290.

Thank you very much for your attention to this matter.

Sincerely,

Carl Malamud
President & CEO
Public.Resource.Org

cc: David Halperin
Of Counsel
Public.Resource.Org

PUBLIC.RESOURCE.ORG ~ *A Nonprofit Corporation*

Public Works for a Better Government

April 1, 2015

VIA HTTP AND FIRST CLASS MAIL

U.S. Department of Housing and Urban Development
Freedom of Information Act Office
451 7th Street, SW, Room 10139
Washington, DC 20410-3000
URL: https://hudpal.efoia-host.com/palMain.aspx

RE: Freedom of Information Act Request

Dear FOIA Officer:

On behalf of Public.Resource.Org, and pursuant to the Freedom of Information Act, 5 U.S.C. § 552, I request a copy of Underwriters' Laboratories *UL 181–2003, Standard for Safety Factory-Made Air Ducts and Air Connectors* which is incorporated by reference in 24 CFR 3280.4 and used in 24 CFR 3280.702.

Please provide the record in electronic form if possible.

If it is your position that *UL 181–2003, Standard for Safety Factory-Made Air Ducts and Air Connectors* (or portions thereof) is exempt from disclosure, please state the basis of the denial of each portion of the record withheld. In addition, please provide the nonexempt portions of the record.

Public.Resource.Org requests that all fees in connection with this FOIA request be waived in accordance with 5 U.S.C. § 552(a)(4)(A)(iii), because it does not seek the records for a commercial purpose and disclosure "is in the public interest because it is likely to contribute significantly to public understanding of the operations and activities of the government." Because it was incorporated by reference into the Code of Federal Regulations, the requested record is part of the agency's governing law. Accordingly, it is the essence of the "operations and activities of the government." However, because it is not published in the Federal Register, the public does not have the same access to it that it has to other parts of the agency's regulations. Disclosure of the record will allow the public to gain knowledge about what is included in the agency's binding law.

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Thank you very much for your attention to this matter.

Sincerely,

Carl Malamud
President & CEO
Public.Resource.Org

cc: David Halperin
Of Counsel
Public.Resource.Org

EXHIBIT 10

United States Department of the Interior

OFFICE OF THE SOLICITOR
1849 C STREET, NW
WASHINGTON, DC 20240

IN REPLY REFER TO:

VIA U.S. MAIL

Mr. Carl Malamud
President, Public.Resource.Org
1005 Gravenstein Highway North
Sebastopol, CA 95472

SEP - 8 2015

Re: Your letter dated July 20, 2015

Dear Mr. Malamud,

I am writing to you on behalf of Solicitor Hilary Tompkins in response to your letter dated July 20, 2015. As you know, in that letter you identified a number of concerns with respect to the treatment of your public comment by the Bureau of Safety and Environmental Enforcement (BSEE) in conjunction with BSEE's proposed regulatory update concerning cranes mounted on fixed oil and gas platforms on the outer Continental Shelf (OCS). BSEE's proposed rule would incorporate by reference the updated Seventh Edition of American Petroleum Institute (API) Specification 2C (Spec. 2C), "Offshore Pedestal-mounted Cranes" (2012), into its regulations in place of the Sixth edition of API Spec. 2C currently incorporated by reference in BSEE regulations.[1]

Your principal concerns focus on two issues: the initial unavailability of your comment in Hypertext Markup Language (HTML), the native file format in which you submitted your comment, and BSEE's decision to withhold publishing two comment attachments based on BSEE's determination that those attachments contain copyrighted material. Specifically, your attachments presented the Sixth edition of API Spec. 2C in two different formats.

With respect to the first issue, it is my understanding that the administrator of the Federal Docket Management System (FDMS) is responsible for maintenance of the public dockets on regulations.gov and the manner and format in which public comments are posted on that website. In any event, as you requested, FDMS ultimately posted your comment in the HTML format. Accordingly, it appears that FDMS has addressed your concern about your comment's file format and its accessibility.

In regard to your second issue concerning copyrighted material, I have confirmed that BSEE's incorporation by reference of materials into its regulations does not waive or vitiate any applicable copyright protections associated with those materials. The Office of the Federal

[1] 30 C.F.R. § 250.108(c) and (d) currently require compliance with the Sixth edition of API Spec. 2C. The proposed rule would require compliance with the Seventh edition of API Spec. 2C. BSEE's current incorporation by reference of the Sixth edition of API Spec. 2C is reflected in 30 C.F.R. § 250.198(h)(69).

Register (OFR) recently explained that relevant laws "have not eliminated the availability of copyright protection for privately developed codes and standards . . . incorporated into federal regulations." 79 Fed. Reg. 66267, 66268 (Nov. 7, 2014). Based on API's longstanding position and BSEE's review of the standard itself, BSEE reasonably concluded that the Sixth edition of API Spec. 2C is a privately developed standard protected by copyright maintained by API.[2] As OFR noted, an agency's incorporation by reference of a copyrighted standard does not eliminate applicable copyright protections. Therefore, BSEE reasonably and properly concluded that FDMS should not post on regulations.gov the attachments associated with your comment because those attachments contained copyrighted material. BSEE also properly described its obligations concerning copyrighted material in the notice of proposed rulemaking: "When a copyrighted industry standard is incorporated by reference into our regulations, BSEE is obligated to observe and protect that copyright."[3] However, consistent with BSEE's longstanding practice, and with OFR's regulations on incorporation by reference (1 C.F.R. § 51.5), BSEE also provided instructions in that notice on how the public may view the incorporated API standard on API's public website.[4]

In addition, even though BSEE correctly decided not to post API Spec. 2C in the docket on regulations.gov because of the copyright protections, BSEE continues to make this standard available, without charge, for public review and inspection at its offices.[5] Thus, BSEE has made the material it proposes to incorporate by reference reasonably available to interested parties and discussed the reasonable availability of this material in accordance with 1 C.F.R. § 51.5(a)(1).

Sincerely,

Dennis Daugherty
Assistant Solicitor, Offshore Resources
Division of Mineral Resources
Office of the Solicitor

Cc: Honorable Hilary C. Tompkins
Solicitor, U.S. Department of the Interior

Mr. Brian M. Salerno
Director, Bureau of Safety and Environmental Enforcement

---

[2] In fact, it is my understanding that your attachments, which reproduced the Sixth edition of API Spec. 2C, also reflected API's copyright designation and prohibition against reproduction or transmission without prior written permission.

[3] 80 Fed. Reg. 34113, 34114 (June 15, 2015).

[4] Id.

[5] Id.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-3000

OFFICE OF ADMINISTRATION

AUG - 6 2015

Mr. Carl Malamud
President and CEO
Public Resource Organization
1005 Gravenstein Highway North
Sebastopol, CA 95472

RE: Freedom of Information Act Request
FOIA Control No.: 15-FI-HQ-01670

Dear Mr. Malamud:

This letter is in response to your Freedom of Information Act (FOIA) request dated July 2, 2015. Specifically, you requested the Underwriter Laboratories (UL) 737 standard which applies to homes and manufactured housing.

When responding to a FOIA request, the Department of Housing and Urban Development searches for responsive documents existing up to the date that the request is received in the Department's FOIA Branch. Your request was received on July 2, 2015.

A search of Headquarters' records by knowledgeable staff failed to locate any documents at HUD Headquarters that would be responsive to your request. The standard that you requested is copyrighted by UL. You will need to purchase a copy of the standard directly from UL.

I am the official responsible for this determination based on information provided by the Office of Housing. You may appeal this determination within 30 days from the date of this letter. If you decide to appeal, your appeal should include copies of your original request and this response, as well as a discussion of the reasons supporting your appeal. The envelope should be plainly marked to indicate that it contains a FOIA appeal and be addressed to:

U.S. Department of Housing and Urban Development
Attention: FOIA Appeals
OGC, Ethics and Appeals Law Division
451 Seventh Street, SW, Suite 213
Washington, DC 20410

Telephone: (202) 708-3815

For your information, your FOIA request, including your identity and any information made available, is releasable to the public under subsequent FOIA requests. In responding to these requests, the Department does not release personal information, such as home address telephone number, or Social Security number, all of which are protected from disclosure under FOIA Exemption 6.

If you need additional information, please contact Ms. Eugenia Harris at (202) 402-5074. Thank you for your interest in the Department's programs and policies.

Sincerely,

for Deborah Growden

Vicky Lewis
Deputy Director, Office
Of the Executive Correspondence

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-3000

OFFICE OF ADMINISTRATION

AUG - 6 2015

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1005 Gravenstein Highway North
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Sincerely,

for Deborah Growden

Vicky Lewis
Deputy Director, Office
Of the Executive Correspondence

U.S. CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MARYLAND 20814-4408

Todd A. Stevenson
The Secretariat ▫ Office of the Secretary
Office of the General Counsel

Tel: 301-504-6836
Fax: 301-504-0127
Email: tstevenson@cpsc.gov

May 18, 2015

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Carl Malamud
President & CEO
Public Resource.Org
1005 Gravenstein Highway North
Sebastopol, CA 95472

Re: FOIA Request 15-F-00342 seeking the ASTM product standard, *ASTM F 1447-94, Standard Specification for Protective Headgear Used in Bicycling 1994 Edition*, which is incorporated by reference ikn 16 CFR 1203.53(b) and used in 16 CFR 1203.53(a) FCPSC interaction with the ANSI Z21/CGP Joint Central Furnace working group .

Mr. McFarlan:

Thank you for your Freedom of Information Act ("FOIA") request seeking information from the U.S. Consumer Product Safety Commission ("Commission").

The records that you seek, *ASTM F 1447-94, Standard Specification for Protective Headgear Used in Bicycling 1994 Edition*, are the copyright property of ASTM (American Society for Testing and Materials. The ASTM standard must be purchased from ASTM from their website, www.astm.org/.

According to the Commission's FOIA regulations at 16 C.F.R. § 1015.7, you may appeal our decision within thirty (30) days of your receipt of this letter by writing to: FOIA APPEAL, General Counsel, ATTN: Office of the Secretary, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, Maryland 20814-4408.

Processing this request, performing the file searches and preparing the information, cost the Commission $50.00. In this instance, we have decided to waive all of the charges.

Sincerely,

Todd A. Stevenson

Enclosures

U.S. CONSUMER PRODUCT SAFETY COMMISSION
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Todd A. Stevenson

EXHIBIT 11

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR TESTING AND MATERIALS d/b/a/ ASTM INTERNATIONAL;

NATIONAL FIRE PROTECTION ASSOCIATION, INC.; and

AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.

Plaintiffs,

v.

PUBLIC.RESOURCE.ORG, INC.,

Defendant.

PUBLIC.RESOURCE.ORG, INC.,

Counterclaimant,

v.

AMERICAN SOCIETY FOR TESTING AND MATERIALS d/b/a/ ASTM INTERNATIONAL;

NATIONAL FIRE PROTECTION ASSOCIATION, INC.; and

AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.

Counterdefendants.

Case No. 1:13-cv-01215-EGS

DEFENDANT-COUNTERCLAIMANT PUBLIC.RESOURCE.ORG, INC.'S RESPONSE TO PLAINTIFF-COUNTERDEFENDANT AMERICAN SOCIETY FOR TESTING AND MATERIALS d/b/a ASTM INTERNATIONAL'S FIRST SET OF INTERROGATORIES (NOS. 1-15)

Filed: August 6, 2013

Trademarks is a fair use, describe all facts and evidence supporting your contention.

RESPONSE TO INTERROGATORY NO. 8:

Public Resource incorporates its general objections as if fully set forth herein. Public Resource objects to this interrogatory to the extent it seeks disclosure of "all facts and evidence supporting your contention" and therefore seeks disclosure of information that falls under the work product doctrine. Public Resource objects to this interrogatory and to the term "fair use" as vague and ambiguous. Public Resource objects to this interrogatory because it seeks information that is publicly available, already known, or equally available to Plaintiffs. Public Resource objects to this interrogatory as premature, as it seeks "all facts and evidence" at an early stage of the litigation.

INTERROGATORY NO. 9:

If you contend that Plaintiffs are misusing or have misused their copyrights and/or trademarks, describe all facts and evidence supporting your contention.

RESPONSE TO INTERROGATORY NO. 9:

Public Resource incorporates its general objections as if fully set forth herein. Public Resource objects to this interrogatory to the extent it seeks disclosure of "all facts and evidence supporting your contention" and therefore seeks disclosure of information that falls under the work product doctrine. Public Resource objects to this interrogatory and to the term "misused" as vague and ambiguous. Public Resource objects to this interrogatory because it seeks information that is publicly available, already known, or equally available to Plaintiffs. Public Resource objects to this interrogatory as premature, as it seeks "all facts and evidence" at an early stage of the litigation.

INTERROGATORY NO. 10:

If you contend that Public Resource has not used Plaintiffs' Trademarks in commerce, describe all facts and evidence supporting your contention.

RESPONSE TO INTERROGATORY NO. 10:

Public Resource incorporates its general objections as if fully set forth herein. Public

Resource objects to this interrogatory to the extent it seeks disclosure of "all facts and evidence supporting your contention" and therefore seeks disclosure of information that falls under the work product doctrine. Public Resource objects to this interrogatory because it seeks information that is publicly available, already known, or equally available to Plaintiffs. Public Resource objects to this interrogatory as premature, as it seeks "all facts and evidence" at an early stage of the litigation.

INTERROGATORY NO. 11:

If you contend that Plaintiffs' claims are barred by waiver or estoppel, describe all facts and evidence supporting your contention.

RESPONSE TO INTERROGATORY NO. 11:

Public Resource incorporates its general objections as if fully set forth herein. Public Resource objects to this interrogatory to the extent it seeks disclosure of "all facts and evidence supporting your contention" and therefore seeks disclosure of information that falls under the work product doctrine. Public Resource objects to this interrogatory because it seeks information that is publicly available, already known, or equally available to Plaintiffs. Public Resource objects to this interrogatory as premature, as it seeks "all facts and evidence" at an early stage of the litigation.

INTERROGATORY NO. 12:

For each interrogatory, identify all persons who provided information or documents for Public Resource's responses and the persons who are most knowledgeable about the factual subject matter.

RESPONSE TO INTERROGATORY NO. 12:

Public Resource incorporates its general objections as if fully set forth herein. Public Resource objects to this interrogatory to the extent it seeks disclosure of information that falls under the attorney-client privilege, the work product doctrine, or any other applicable privilege or protection. Public Resource objects to this interrogatory because it seeks information that is publicly available, already known, or equally available to Plaintiffs.

EXHIBIT 12

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- Copyright

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- Join today
- Invite Friends
- Gifts

Stay Connected

EXHIBIT 13

Show Me The Manual

[music]

Man 1: [0:10] Public Resource is a nonprofit corporation, and our mission is to make government information more available. We've put 14,000 hours of congressional hearings online, we've put 100 years of the Court of Appeals that were not available on the Internet for anybody to use without restriction. But people may not realize this, there's a large part of the federal law and the state law that isn't available, and it costs money to purchase.

Efren Carrillo: [0:37] My name is Efren Carrillo, Sonoma County Supervisor representing the 5th District. Another responsibility that comes with being on the Board is also a Director of the Sonoma County Water Agency. We are charged with the duties of water supply, flood control and sanitation. [0:50] In fulfilling our responsibility to provide water to our constituents, we're required to follow strict state regulations and federal regulations. Here in our agency, we do spend thousands of dollars in ensuring that we have the codes and the regulations available to us to ensure that we are meeting our requirements.

Roberta MacIntyre: [1:09] Hi, I'm Roberta MacIntyre, I'm the Fire Marshal for the County of Sonoma. That means I'm responsible for fire prevention. As the Fire Marshal for Sonoma County, one of the things we have to do is maintain an enormous library of codes and standards. [1:24] For example, not only do we have to have the California fire code, but we also have to have the California building code, the California electrical code, the residential code now, which is new to California. On top of all of that, we have the entire NFPA standard set, which in itself is, for my budget, about $1,500.

Shems Peterson: [1:46] I'm Shems Peterson, Head Building Inspector for Sonoma County. This is my 26th year of service. [1:52] The department has to purchase the codes for all the inspection and plan check staff for the County of Sonoma. I believe it was over $30,000 for the last code cycle.

Man 1: [2:02] Because a lot of technical standards developed by the private sector are mandated by the federal government and by state governments, we think that citizens have a right to read these laws that are binding, that are critical to the public safety, that have criminal penalties attached for noncompliance. [2:21] We're buying these standards. We started by spending $7,500 for 73 standards that are mandated by OSHA and the Department of Transportation. We've gone on and spent another $30,000 buying some of these standards that have been incorporated by reference. We're beginning the process

of copying those standards, retyping them into HTML so that the tables are nicely typeset, we're taking the diagrams and we're redrawing the diagrams so that they look nice, and we're trying to make this information available to the people.

Man 2: [2:53] When somebody can say to you, "This is the law," and you can't read it unless you pay for it, then we've really undermined something really fundamental in our society.

Shems: [3:04] Contractors, designers, architects, civil engineers, structural engineers need to know or to verify they're in compliance by looking at the code, particularly structural engineers, because there's actually formulas in there that they have to use in order to demonstrate their design will withstand the structural loads that are going to be imposed.

Efren: [3:26] You know, oftentimes people think that the regulations or the laws in the books are only for the engineers or for the decision-makers. Private residents want to see this information and want to have access to that as well, whether it's the private resident turning on the tap, whether it's the farmer who depends on the water to grow their crop. I absolutely believe that this information should be made available to everybody.

Roberta: [3:51] For volunteer firefighters, really, fundamentally, they should have an awareness of fire prevention. In terms of the reference standards for them, the one that comes to the top of my mind is NFPA 1500. That is the reference standard that speaks to their fire protection ensemble, their clothing that they wear.

Man 1: [4:12] I'm a firm believer that when you put technical information up on the Internet, people have the opportunity to educate themselves, to create new businesses, and just as importantly, they have the opportunity to know what the law says and obey the law. They have the opportunity to have access to justice, to be able to say, "Gee, I want to do something; let's make sure I'm doing it right."

Bill Fink: [4:36] My name's Bill Fink. Over the years, I've imported a number of vehicles for sale in this country. The standards have never told you how to meet them. The standards basically say what needs to be done, and how you do it is up to you.

Man 1: [4:49] Our goal is that our government reform the way they make regulations, and make public access to the law a fundamental part of the regulatory process.

Shems: [5:00] One time when I was out during an inspection, not going out in the field like I used to, I had 1998 codebooks in my vehicle, because I hadn't changed them over yet, and we were in the 2007 version. The gentleman on-site had a smartphone, and we went to your website, got into the building code, and could look at a specific section that I needed in order to determine whether he was in compliance or not. The laptop for the standards would be able to do the same thing, it'd be wonderful.

Roberta: [5:29] I remember years ago, before we had the ensemble requirements per se, we would go into a building to make a fire attack, and you knew it was about time to back out when the earwax in your ears started to melt and drip out. That was an indicator that, "You know what? It's getting a little hot in here, let's get out."

Man 3: [5:49] Part of the magic of the automobile manufacturing procedure is to do good without obviously doing good. This car will stand up to a 50-mile-an-hour rear impact.

Shems: [6:03] In an earthquake, when a force comes this way, the tendency is for the building to want to uplift on one end. It's hard for us, as people to conceive a huge building actually lifting up and turning over, but yet it does happen. [6:16] If you have a load path that allows the energy or the load to be transmitted from the topmost down to the ground, and they're all connected properly, the result will be less catastrophic damage. You'll always have damage in an earthquake, broken windows, broken sheetrock, some doors and things like that, but what we're trying to prevent here is catastrophic damage where lives are lost and huge property damage occurs. The purpose of the code provides for methods and prescribes methods that you have to use to help mitigate those forces that are applied in an earthquake.

[6:54] When you have an "X" or cross like this embracing the vertical elements, what it does is it will help move everything together and again, prevent catastrophic damage and that's an important part of a seismic force-resisting element.

Rob Bulik: [7:09] My name is Rob Bulik. I own Schank Brothers' Garage and I care about workplace safety. [music plays] It's a high-current electric motor that runs a hydraulic pump that powers the pistons. The shop's main air compressor powers all of our air tools that we have here. It runs two hydraulic cylinders and it's also balanced with the steel cables that support everything. [7:29] Just some light duty welding, things like that, anything that needs heat applied to it. The electrical part is quite dangerous if we had issues with the wiring or something

like that. If one of these tanks was to fall over and the top was to break off, the thing will basically shoot off like a missile. [music ends]

[music 07:44 to 08:03]

Man 1: [8:04] Our goal here is to publish a law to establish the principle that the law become available, but then government should take this over and figure out a way to make the law available and do it in a way that the standards bodies that make these standards are able to survive because they do need money. [8:21] The National Fire Protection Association, for example, does amazing work. They save lives. They have standards for fire sprinklers, standards for fire hydrants, standards for foam, standards for life safety, and these protect the lives of our volunteer fire fighters. They protect the lives of our children. It's important that organizations like the National Fire Protection Association continue to survive.

Roberta: [8:44] To do my job properly, I have to have those standards. I refer to those standards on a daily basis. With the extrication equipment that we use to get people that are trapped in vehicles out, we have a couple of fundamental kinds. [8:57] This is called a set of cutters. Obviously, you could see how the blades would operate. They open up wide and they're used to cut like the posts on vehicles, to take the roof off.

Shems: [9:07] What we have here are several safety features that are very common in buildings. First of all, we have the luminescent exit sign that during a fire, for instance, where you would have perhaps a lot of smoke, you should be able to see that sign through the smoke.

Bill: [9:20] The passenger bags now are dual-stage and if it's a light impact, only stage one will deploy, but stage two is still there.

Shems: [9:30] Emergency back-up lighting, that if the power goes off, that would act as a lighting to help people find their way to this exit. In addition to that, we have what we call panic hardware on the doors. Anybody just gets pushed right up against the door and you're outside.

Man 4: [9:46] I'm based in California, but I frequently go to Washington D.C., and people look at this quest to make the law available. In fact, to make any government database available, like patents or the Securities and Exchange Commission. [9:58] They say, "You know, this is really silly because most people don't want this information. It's boring. It's technical. Most people aren't going to be able to read this. Why do you want to make the building codes for free when the only people who really need it are a couple of building inspectors and a couple of engineers?"

[10:15] I call that the "Dumb American" theory. The theory that Americans are not capable of reading a building code, that a homeowner wouldn't be able to consult a building code to see whether their contractor put those electrical outlets at the proper spacing.

[10:29] I think Americans are smart and in fact, every time I've put a big database online...I remember when the Commissioner of Patents, the Honorable Bruce Lehman, and he and I had a long fight about whether the U.S. Patent Database should be available on the Internet or not.

[10:45] Well, we put that patent database online, and do you know what? All of a sudden, engineering students and engineers in Silicon Valley and journalists and just people that were interested, amateur inventors were able to start reading these patents without paying a lot of money and they understood what was in there.

Man 5: [11:04] MAKE Magazine is really a kind of a magazine for amateurs who build things, who make things, lots mostly with technology. I like to think of it as kind of a reinvention of some of the older magazines that once existed in this vein of Popular Mechanics, Popular Science. [11:20] Encourage people to go out and build things, and a lot of the world has become professionalized. Meaning, in a sense, you pay for access to information. You pay for access to a society. You're certified to belong there and I think we've squeezed out some of the amateur level.

[11:40] Not that it's necessarily ever gone away, it's just we almost ignore it because it's not...doesn't fit into the professionalization picture. I think one of the things...I'm an advocate is, the role of amateurs. They build...if we just take something that is traditional DIY space, they build additions to their home, they repair their car. They probably should have access to the same kind of information as either a professional licensed carpenter or a professional mechanic.

Man 6: [12:09] I think standards, making them publicly available, actually, is one of the best things is that it enables discussion around those standards. People can not only know what their legally required to do, but then they can make new suggestions.

Efren: [12:23] In a time when we have competitive dynamics here, where the United States is competing with other markets around the world, we need to ensure that our students have the resources and the tools available to ensure academic success. [12:37] Whether it's engineering students, science students or math and science students in our universities, having access to these codes and

regulations is just as important to them in their education as it is to someone carrying it out in the practical real world in the work world.

[12:52] I believe that when we provide these codes and these regulations to our students, we're strengthening their academic ability to ensure future success in their careers.

Shems: [13:01] Students often read codes. In fact, I used to teach at the JC, local JC here, and that was part of the problem was that a code book, just the building code, was $270. If they're not going into a field where they'd be able to reuse it's...it's a large investment.

Woman 1: [13:20] I think it's not for us to decide who can and cannot make sense of the law or whatever is available to them to read. It's up to the people themselves to judge whether or not they want to make sense of it and some certainly will.

Man 1: [13:32] We think a lot of these technical standards are important for engineering students. They're important for small businessmen who are trying to start new businesses. It's about innovation. It's about America's competitiveness. It shouldn't have to cost a lot of money to know what the law is. [13:48] Every day we get dozens of standards in from different kinds of bodies. Sometimes we buy them on the used market...Amazon, eBay, some of the used stores. Sometimes we write away to the different standards bodies. This is the orifice metering of natural gas standards, the cosmetic ingredient dictionary. This is a fun one. This is "The Safety and Handling and Use of Explosives."

[14:09] This is "The Air Release, Air Vacuum and Combination Air Valves Manual of Water Supply Practices." It comes in a shrink wrapped agreement and by opening this package, you agree to certain terms and conditions and what you're agreeing to is you're not going to even give this copy to somebody else. That's really not very fair. Not only that for the amount of money we're spending to buy the law, you ought to be able to at least make fair use.

[14:35] This is "The US Public Health Service Drinking Water Standards." It came from a library which disposed of it like libraries do, and it ends up on the used market. This is a 1962 standard. There's obviously safety implications of the federal government requiring standards from 1962. One of our hopes is that by publishing this information, the government regulators will go in and clean up the books.

[15:03] I bought this on the used market. This is "The International Maritime Dangerous Goods Code." I found a used copy for $31. This normally costs a few

hundred dollars for the current version but because the specific version incorporated by the federal government is an older one, we were able to purchase this on the used market. Not all standards are like that. Some of them are simply just not available that way.

Man 7: [15:26] The whole progression of technology depends on our ability to see and understand what went before and I think the same is true of the law and particularly when we incorporate technical standards into the law. We have a real problem if only some people can read them.

Man 8: [15:45] The laws of the operating system of the government. If you don't have access to the code of government, you have no idea how things are working. If there are things that are wrong, you can't bug fix if you don't have access to the source code.

Jennifer Polka: [15:53] It's not just the legal outcomes that we should think about here. I think we should be thinking about the way citizens are thinking about government and the larger impacts of the way we think and feel about government on the way we fund our public institutions. [16:07] If we feel like we're being treated fairly, if we have access to the information that we need in order to live a legal, free lives as citizens here, it's going to improve our relationship in a way that makes us care about government and we need to start caring about government again. We need to make it work for the people.

[music 16:28 to 16:47]

Man 1: [16:47] When our government was formed...When our founding fathers came up with our constitution, there was a big argument about the level of democracy that we would have. There was the Roman republic model which was a top down, aristocratic...the senators telling people what to do. [17:05] That led to big empires. There were good things about the Roman republic, but there was also the Greek democratic model in which everybody had a voice. John Adams felt very strongly that if democracy was going to work, it would only work if the citizenry was informed.

[17:22] If people had knowledge and were able to educate themselves, then we would have a democracy that functioned and we would have a government that would become great and that would fair and it would be an economy that would prosper for everyone.

[17:36] What John Adams said and it was very memorable quote, he said, "Let every sluice of knowledge be set a-flowing." That wasn't a, "knowledge must be free," like we do in today's free culture world. It was for democracy to work, "let

every sluice of knowledge to be set a-flowing" because that is what would make America work.

[17:56] I think John Adams was right. I think we need to go back to those fundamental values. The idea that American people are smart and can make their government work and can make our economy work, but that only happens if we take away these barriers to that very fundamental information which are the basic laws of our country.

Jennifer: [music begins] [18:16] I'm Jennifer Polka from Oakland, California. I can read the law. I want to read the law. Show me the manual.

Shems: [18:24] My name is Shems Peterson. I'm a building inspector and I believe everybody ought to have access to public safety codes.

Nick Thompson: [18:29] My name is Nick Thompson. I'm from Los Alamos, New Mexico. By making the law available, we make it better. Show me the manual.

Jill Marante: [18:36] I'm Jill Marante. I'm from New York. I truly believe that technical standards are essential to our modern society. Show me the manual.

Dale Doreghty: [18:43] Hi. I'm Dale Doreghty and I believe that public safety codes are relevant to the makers, the doers, the risk takers.

Rob Bracket: [18:50] My name is Rob Bracket. I'm from Chicago. I think open standards and understanding our laws is critically important. Show me the manual.

Roberta: [18:57] My name is Roberta Macintyre and as the Fire Marshall, I believe everyone should have access to the codes and regulations.

Zach Williams: [19:04] My name is Zach Williams. I'm from Fort Worth, Texas. I think it's important that people be able to read the manuals. Show me the manuals.

Man 1: [19:10] Laws are the source code for democracy, so show me the manual.

Efren: [19:13] My name is Efren Carrillo and I believe all of our citizens should have access to public safety codes and have the right to bear knowledge. [music ends] [music 19:23 to 20:10]

[19:23]

Transcript by CastingWords

EXHIBIT 14

From: Carl Malamud
Sent: Tue 6/30/2009 5:22 PM (GMT -7)
To: Deborah Hunt
Cc:
Bcc:
Subject: Re: special libraries

Thanks so much for this tip ... I am actually in Missouri as we speak, but won't be heading through Kansas City until Friday, and they are unfortunately closed for the holidays. But, I will definitely give them a ring.

The Illinois State Library and the Linda Hall Library appear to be the only two in the U.S. with a decent collection of these technical standards from organizations such as ANSI, ASTM, and UL. While many of these standards have a strong copyright interest, there is a subset of these that have been incorporated by reference into the Code of Federal Regulations. Since those standards have become law of the land, and since the courts have ruled that those standards that have been incorporated as law are not subject to copyright, I'm trying to figure out how to make these standards more broadly available for the public to read.

Thanks again for the tip. Perhaps we could do a phone call or I could stop by the Exploratorium to meet you and explain what we're trying to do? I'm based in Sebastopol, about an hour north of you and get to the city frequently.

Best regards,

Carl

On Jun 30, 2009, at 3:56 PM, Deborah Hunt wrote:

> Hi, Carl.
> I've been back over 10 days and this got buried.
> What kind of tech standards are you after?
> The Linda Hall Library has a fabulous collection:
> http://www.lindahall.org/collections/engineering/specs.shtml
>
> Deb
>
> On Wed, Jun 10, 2009 at 7:41 PM, Deborah Hunt
> <dhunt@exploratorium.edu> wrote:
> Hi, Carl.
> I'm in DC on vacation and then at the SLA Annual Conference and not
> back at work till 6/22.
> If you can wait till then, we can talk.
>
> have you tried worldcat.org to look for your standards or
> firstgov.gov?
> Deb

>
> On Wed, Jun 10, 2009 at 4:46 PM, Carl Malamud <carl@media.org> wrote:
> Hi -
>
> I run a small nonprofit called Public.Resource.Org that tries to put
> more government information on-line. We've had a big impact on
> putting more judicial information on the Internet, but also do
> video, and a variety of other documents such as IRS nonprofit tax
> returns.
>
> I'm looking for a special library that might have a particular set
> of docs (technical standards) and I was wondering if perhaps you
> might have a few minutes for a phone call to point me in the right
> direction? I must confess, I found your name by scanning the SLA
> board page. My father spent 6 months at the Exploratorium as
> assistant director working with Oppenheimer and then went off and
> started a science museum called SciTech. So, Exploratorium rang a
> bell. :)
>
> Let me know if you might have a few minutes.
>
> Best regards,
>
> Carl Malamud
> Public.Resource.Org
>
>
>
> --
> _____
> Deborah Hunt
> Manager, Learning Commons
> Exploratorium
> 3601 Lyon Street
> San Francisco, CA 94123
> Voice: 415-353-0485
> Fax: 415-561-0370
> mailto:dhunt@exploratorium.edu
>
> "There is no such thing as a self-made (wo)man. We are made up of
> thousands of others. Everyone who has ever done a kind deed for us, or
> spoken one word of encouragement to us, has entered into the makeup of
> our character and our thoughts, as well as our success."
> George Matthew Adams
>
>
>
> --
> _____
> Deborah Hunt
> Manager, Learning Commons
> Exploratorium

> 3601 Lyon Street
> San Francisco, CA 94123
> Voice: 415-353-0485
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> "There is no such thing as a self-made (wo)man. We are made up of
> thousands of others. Everyone who has ever done a kind deed for us, or
> spoken one word of encouragement to us, has entered into the makeup of
> our character and our thoughts, as well as our success."
> George Matthew Adams

EXHIBIT 15

EXHIBIT 69
Ashley Scevyn, CSR No. 12019
Date 2/27/15
Witness: MALAMUD

From: Carl Malamud
Sent: Mon 4/23/2012 5:23 PM (GMT -7)
To: Joseph Lorenzo Hall
Cc:
Bcc:
Subject: Re: sibr

ok. let's keep it just at what you've done up till now.

I'd like to look at the docs, but it is under two provisos:

1. You need to stay both anonymous and mum on this. No bragging about it, talking about it. And, I'm not going to do that either.
2. We're not going to use your docs. I just wanted to see if they are there and are basically in the range we need.

I may still end up going retail (about $50/doc).

FYI, the exact match is actually pretty important ... only specific docs that have been deliberately incorporated and are critical to the public safety. So, must be the exact doc that is cited. Or, since the CFR is pretty fucked up, if it isn't, a pretty convincing case has to be made that the doc cited did not actually exist and what they meant was the previous revision just before the named year. But, normally, it has to be exactly the right doc, and it can't be taken in violation of terms of use unless me and our legal folks have scrubbed the situation very carefully. (Using the Berkeley license won't count because it could lead to them being cancelled, so we would only do that with somebody pretty high up backing the decision.)

Appreciate your help ... look forward to looking at the docs.

Carl

On Apr 23, 2012, at 5:15 PM, Joseph Lorenzo Hall wrote:

> for 2513, I can't seem to go back to 1999... only as far as 2000
> (attached screen shot)... I'll include 2000, even thought that's not
> right. And it was A106/A106M (not A333/A333M as my previous email
> stated) that has fucked up PDFs... I'll also include the 4b revision
> that is not fucked up (both 4a and 4 for that one have screwy PDFs).
> best, Joe
>
> On Mon, Apr 23, 2012 at 8:07 PM, Joseph Lorenzo Hall <joehall@gmail.com> wrote:
>> I think I can get them all... the PDF for A333/A333M is very strange
>> (rendered badly as if there are PDF lingo mistakes). Will send them in
>> a ZIP... naturally, I'm a bit concerned these might be watermarked as
>> my having downloaded them (they're watermarked visually at the bottom
>> of the page, but not specific to my name). best, Joe
>>
>> On Mon, Apr 23, 2012 at 7:35 PM, Carl Malamud <carl@media.org> wrote:
>>> Hi -
>>>
>>> See if you can see any of these documents:
>>>
>>> ASTM D 2517 Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings 2000
>>> ASTM A 333/A 333M Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service
2005

>>> ASTM A 106/A 106M Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
--2004--
>>> ASTM D 2513 Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings 1999
>>> ASTM A 240/A 240M Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Fusion-Welded Unfired Pressure Vessels 1999
>>>
>>> Has to be the exact version (e.g., D2517-2000).
>>>
>>> Carl
>>
>>
>>
>> --
>> Joseph Lorenzo Hall
>> Postdoctoral Research Fellow
>> Media, Culture and Communication
>> New York University
>> https://josephhall.org/
>
>
>
> --
> Joseph Lorenzo Hall
> Postdoctoral Research Fellow
> Media, Culture and Communication
> New York University
> https://josephhall.org/
> <ScreenSnapz002.jpg>

EXHIBIT 16

CERTIFICATE

By Authority Of
THE UNITED STATES OF AMERICA
Legally Binding Document

By the Authority Vested By Part 5 of the United States Code § 552(a) and Part 1 of the Code of Regulations § 51 the attached document has been duly INCORPORATED BY REFERENCE and shall be considered legally binding upon all citizens and residents of the United States of America. *HEED THIS NOTICE*: Criminal penalties may apply for noncompliance.

Document Name: ASTM D86: Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure

CFR Section(s): 40 CFR 1065.710

Standards Body: American Society for Testing and Materials

EXHIBIT 63
Ashley Sceyvn, CSR No. 12019
Date 2/27/15
Witness: MALAMUD

APPROVED

Official Incorporator:
THE EXECUTIVE DIRECTOR
OFFICE OF THE FEDERAL REGISTER
WASHINGTON, D.C.

Designation: D 86 – 07

An American National Standard

Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure[1]

This standard is issued under the fixed designation D 86; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This test method covers the atmospheric distillation of petroleum products using a laboratory batch distillation unit to determine quantitatively the boiling range characteristics of such products as light and middle distillates, automotive spark-ignition engine fuels, aviation gasolines, aviation turbine fuels, 1-D and 2-D regular and low sulfur diesel fuels, special petroleum spirits, naphthas, white spirits, kerosines, and Grades 1 and 2 burner fuels.

1.2 The test method is designed for the analysis of distillate fuels; it is not applicable to products containing appreciable quantities of residual material.

1.3 This test method covers both manual and automated instruments.

1.4 Unless otherwise noted, the values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information only.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 All standards are subject to revision, and parties to agreement on this test method are to apply the most recent edition of the standards indicated below, unless otherwise specified, such as in contractual agreements or regulatory rules where earlier versions of the method(s) identified may be required.

2.2 *ASTM Standards:* [2]

D 97 Test Method for Pour Point of Petroleum Products
D 323 Test Method for Vapor Pressure of Petroleum Products (Reid Method)
D 2892 Test Method for Distillation of Crude Petroleum (15-Theoretical Plate Column)
D 4057 Practice for Manual Sampling of Petroleum and Petroleum Products
D 4177 Practice for Automatic Sampling of Petroleum and Petroleum Products
D 4953 Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)
D 5190 Test Method for Vapor Pressure of Petroleum Products (Automatic Method)
D 5191 Test Method for Vapor Pressure of Petroleum Products (Mini Method)
D 5842 Practice for Sampling and Handling of Fuels for Volatility Measurement
D 5949 Test Method for Pour Point of Petroleum Products (Automatic Pressure Pulsing Method)
D 5950 Test Method for Pour Point of Petroleum Products (Automatic Tilt Method)
D 5985 Test Method for Pour Point of Petroleum Products (Rotational Method)
E 1 Specification for ASTM Liquid-in-Glass Thermometers
E 77 Test Method for Inspection and Verification of Thermometers
E 1272 Specification for Laboratory Glass Graduated Cylinders
E 1405 Specification for Laboratory Glass Distillation Flasks

2.3 *Energy Institute Standards:*[3]

IP 69 Determination of Vapour Pressure—Reid Method
IP 123 Petroleum Products—Determination of Distillation Characteristics
IP 394 Determination of Air Saturated Vapour Pressure
IP Standard Methods for Analysis and Testing of Petroleum and Related Products 1996—Appendix A

[1] This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.08.0A on Distillation.

In the IP, the equivalent test method is published under the designation IP 123. It is under the jurisdiction of the Standardization Committee.

Current edition approved Jan. 15, 2007. Published February 2007. Originally approved in 1921. Last previous edition approved in 2005 as D 86–05.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from Energy Institute, 61 New Cavendish St., London, WIG 7AR, U.K., http://www.energyinst.org.uk.

*A Summary of Changes section appears at the end of this standard.

TABLE 1 Preparation of Apparatus

	Group 1	Group 2	Group 3	Group 4
Flask, mL	125	125	125	125
ASTM distillation thermometer	7C (7F)	7C (7F)	7C (7F)	8C (8F)
IP distillation thermometer range	low	low	low	high
Flask support board	B	B	C	C
diameter of hole, mm	38	38	50	50
Temperature at start of test				
Flask °C	13–18	13–18	13–18	not above
°F	55–65	55–65	55–65	ambient
Flask support and shield	not above ambient	not above ambient	not above ambient	
Receiving cylinder and 100 mL charge				
°C	13–18	13–18	13–18[A]	13–ambient[A]
°F	55–65	55–65	55–65[A]	55–ambient[A]

[A] See 10.3.1.1 for exceptions.

3. Terminology

3.1 *Definitions:*

3.1.1 *charge volume, n*—the volume of the specimen, 100 mL, charged to the distillation flask at the temperature specified in Table 1.

3.1.2 *decomposition, n—of a hydrocarbon,* the pyrolysis or cracking of a molecule yielding smaller molecules with lower boiling points than the original molecule.

3.1.2.1 *Discussion*—Characteristic indications of thermal decomposition are evolution of fumes and erratic temperature readings that usually decrease after any attempt is made to adjust the heat.

3.1.3 *decomposition point, n*—the corrected thermometer reading that coincides with the first indications of thermal decomposition of the liquid in the flask.

3.1.3.1 *Discussion*—The decomposition point, as determined under the conditions of this test method, does not necessarily correspond to the decomposition temperature in other applications.

3.1.4 *dry point, n*—the corrected thermometer reading that is observed at the instant the last drop of liquid (exclusive of any drops or film of liquid on the side of the flask or on the temperature sensor), evaporates from the lowest point in the distillation flask.

3.1.4.1 *Discussion*—The end point (final boiling point), rather than the dry point, is intended for general use. The dry point can be reported in connection with special purpose naphthas, such as those used in the paint industry. Also, it is substituted for the end point (final boiling point) whenever the sample is of such a nature that the precision of the end point (final boiling point) cannot consistently meet the requirements given in the precision section.

3.1.5 *dynamic holdup, n*—the amount of material present in the neck of the flask, in the sidearm of the flask, and in the condenser tube during the distillation.

3.1.6 *emergent stem effect, n*—the offset in temperature reading caused by the use of total immersion mercury-in-glass thermometers in the partial immersion mode.

3.1.6.1 *Discussion*—In the partial immersion mode, a portion of the mercury thread, that is, the emergent portion, is at a lower temperature than the immersed portion, resulting in a shrinkage of the mercury thread and a lower temperature reading.

3.1.7 *end point (EP) or final boiling point (FBP), n*—the maximum corrected thermometer reading obtained during the test.

3.1.7.1 *Discussion*—This usually occurs after the evaporation of all liquid from the bottom of the flask. The term maximum temperature is a frequently used synonym.

3.1.8 *front end loss, n*—loss due to evaporation during transfer from receiving cylinder to distillation flask, vapor loss during the distillation, and uncondensed vapor in the flask at the end of the distillation.

3.1.9 *initial boiling point (IBP), n*—the corrected thermometer reading that is observed at the instant the first drop of condensate falls from the lower end of the condenser tube.

3.1.10 *percent evaporated, n*—the sum of the percent recovered and the percent loss.

3.1.11 *percent loss (or observed loss), n*—one hundred minus the percent total recovery.

3.1.11.1 *corrected loss, n*—percent loss corrected for barometric pressure.

3.1.12 *percent recovered, n*—the volume of condensate observed in the receiving cylinder, expressed as a percentage of the charge volume, associated with a simultaneous temperature reading.

3.1.13 *percent recovery, n*—the maximum percent recovered, as observed in accordance with 10.18.

3.1.13.1 *corrected percent recovery, n*—the percent recovery, adjusted for the difference between the observed loss and the corrected loss, as described in Eq 8.

3.1.13.2 *percent total recovery, n*—the combined percent recovery and residue in the flask, as determined in accordance with 11.1.

3.1.14 *percent residue, n*—the volume of residue in the flask, measured in accordance with 10.19, and expressed as a percentage of the charge volume.

3.1.15 *rate of change (or slope), n*—the change in temperature reading per percent evaporated or recovered, as described in 13.2.

3.1.16 *temperature lag, n*—the offset between the temperature reading obtained by a temperature sensing device and the true temperature at that time.

3.1.17 *temperature measurement device, n*—a thermometer, as described in 6.3.1, or a temperature sensor, as described in 6.3.2.

3.1.18 *temperature reading, n*—the temperature obtained by a temperature measuring device or system that is equal to the thermometer reading described in 3.1.19.

3.1.18.1 *corrected temperature reading, n*—the temperature reading, as described in 3.1.18, corrected for barometric pressure.

3.1.19 *thermometer reading (or thermometer result), n*—the temperature of the saturated vapor measured in the neck of the flask below the vapor tube, as determined by the prescribed thermometer under the conditions of the test.

3.1.19.1 *corrected thermometer reading, n*—the thermometer reading, as described in 3.1.19, corrected for barometric pressure.

4. Summary of Test Method

4.1 Based on its composition, vapor pressure, expected IBP or expected EP, or combination thereof, the sample is placed in one of four groups. Apparatus arrangement, condenser temperature, and other operational variables are defined by the group in which the sample falls.

4.2 A 100-mL specimen of the sample is distilled under prescribed conditions for the group in which the sample falls. The distillation is performed in a laboratory batch distillation unit at ambient pressure under conditions that are designed to provide approximately one theoretical plate fractionation. Systematic observations of temperature readings and volumes of condensate are made, depending on the needs of the user of the data. The volume of the residue and the losses are also recorded.

4.3 At the conclusion of the distillation, the observed vapor temperatures can be corrected for barometric pressure and the data are examined for conformance to procedural requirements, such as distillation rates. The test is repeated if any specified condition has not been met.

4.4 Test results are commonly expressed as percent evaporated or percent recovered versus corresponding temperature, either in a table or graphically, as a plot of the distillation curve.

5. Significance and Use

5.1 The basic test method of determining the boiling range of a petroleum product by performing a simple batch distillation has been in use as long as the petroleum industry has existed. It is one of the oldest test methods under the jurisdiction of ASTM Committee D02, dating from the time when it was still referred to as the Engler distillation. Since the test method has been in use for such an extended period, a tremendous number of historical data bases exist for estimating end-use sensitivity on products and processes.

5.2 The distillation (volatility) characteristics of hydrocarbons have an important effect on their safety and performance, especially in the case of fuels and solvents. The boiling range gives information on the composition, the properties, and the behavior of the fuel during storage and use. Volatility is the major determinant of the tendency of a hydrocarbon mixture to produce potentially explosive vapors.

5.3 The distillation characteristics are critically important for both automotive and aviation gasolines, affecting starting, warm-up, and tendency to vapor lock at high operating temperature or at high altitude, or both. The presence of high boiling point components in these and other fuels can significantly affect the degree of formation of solid combustion deposits.

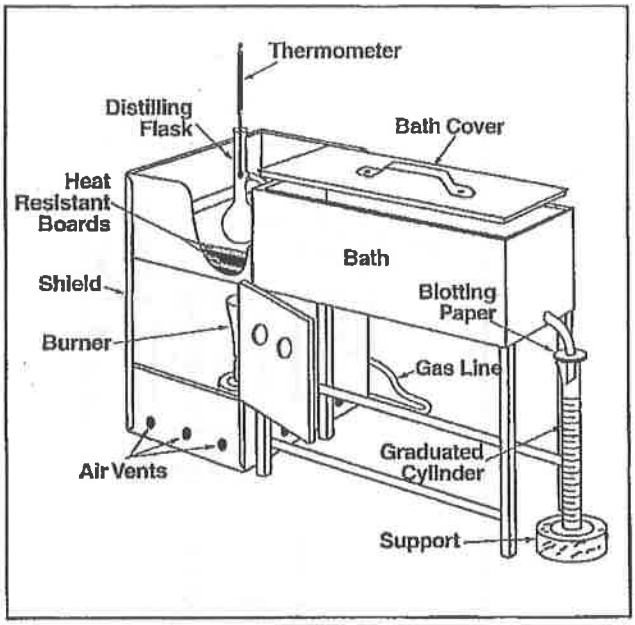


FIG. 1 Apparatus Assembly Using Gas Burner

5.4 Volatility, as it affects rate of evaporation, is an important factor in the application of many solvents, particularly those used in paints.

5.5 Distillation limits are often included in petroleum product specifications, in commercial contract agreements, process refinery/control applications, and for compliance to regulatory rules.

6. Apparatus

6.1 *Basic Components of the Apparatus*:

6.1.1 The basic components of the distillation unit are the distillation flask, the condenser and associated cooling bath, a metal shield or enclosure for the distillation flask, the heat source, the flask support, the temperature measuring device, and the receiving cylinder to collect the distillate.

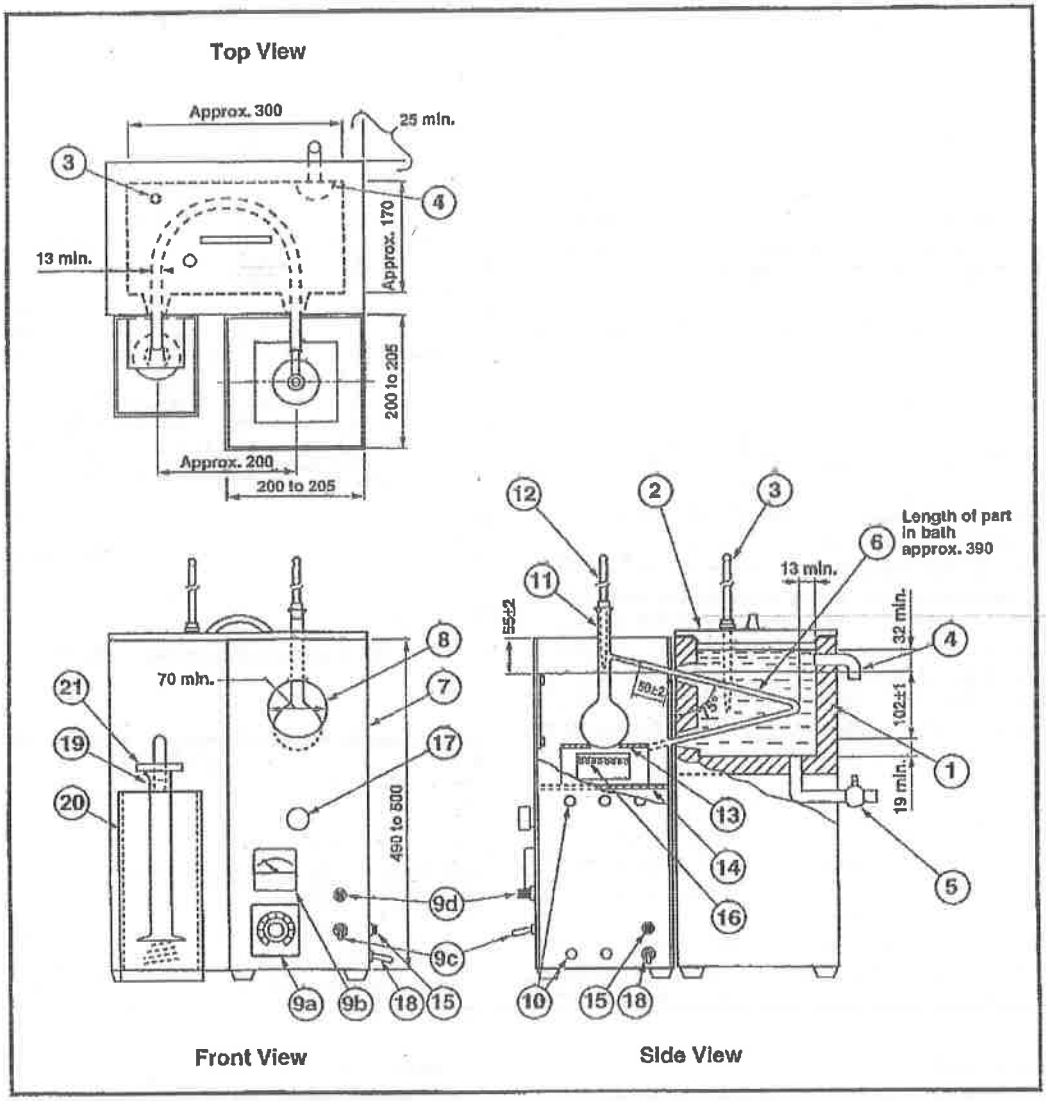
6.1.2 Figs. 1 and 2 are examples of manual distillation units.

6.1.3 In addition to the basic components described in 6.1.1, automated units also are equipped with a system to measure and automatically record the temperature and the associated recovered volume in the receiving cylinder.

6.2 A detailed description of the apparatus is given in Annex A2.

6.3 *Temperature Measuring Device*:

6.3.1 Mercury-in-glass thermometers, if used, shall be filled with an inert gas, graduated on the stem and enamel backed. They shall conform to Specification E 1 or IP Standard Methods for Analysis and Testing of Petroleum and Related Products 1996—Appendix A, or both, for thermometers ASTM



1–Condenser bath
2–Bath cover
3–Bath temperature sensor
4–Bath overflow
5–Bath drain
6–Condenser tube
7–Shield
8–Viewing window
9a–Voltage regulator
9b–Voltmeter or ammeter
9c–Power switch
9d–Power light indicator
10–Vent
11–Distillation flask
12–Temperature sensor
13–Flask support board
14–Flask support platform
15–Ground connection
16–Electric heater
17–Knob for adjusting level of support platform
18–Power source cord
19–Receiver cylinder
20–Receiver cooling bath
21–Receiver cover

FIG. 2 Apparatus Assembly Using Electric Heater

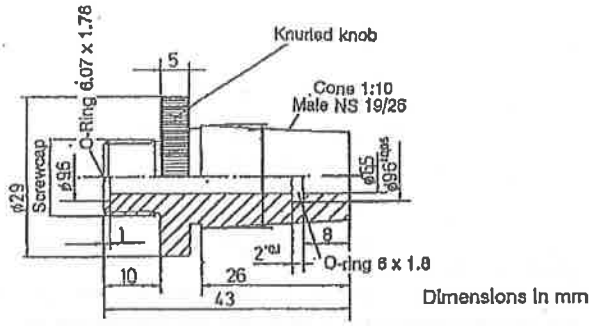


FIG. 3 PTFE Centering Device for Ground Glass Joint

7C/IP 5C and ASTM 7F for the low range thermometers, and ASTM 8C/IP 6C and ASTM 8F for the high range thermometers.

6.3.1.1 Thermometers that have been exposed for an extended period above an observed temperature of 370°C shall not be reused without a verification of the ice point or checked as prescribed in Specification E 1 and Test Method E 77.

NOTE 1—At an observed thermometer reading of 370°C, the temperature of the bulb is approaching a critical range in the glass and the thermometer may lose its calibration.

6.3.2 Temperature measurement systems other than those described in 6.3.1 are satisfactory for this test method, provided that they exhibit the same temperature lag, emergent stem effect, and accuracy as the equivalent mercury-in-glass thermometer.

6.3.2.1 The electronic circuitry or the algorithms, or both, used shall include the capability to simulate the temperature lag of a mercury-in-glass thermometer.

6.3.2.2 Alternatively, the sensor can also be placed in a casing with the tip of the sensor covered so that the assembly, because of its adjusted thermal mass and conductivity, has a temperature lag time similar to that of a mercury-in-glass thermometer.

NOTE 2—In a region where the temperature is changing rapidly during the distillation, the temperature lag of a thermometer can be as much as 3 seconds.

6.3.3 In case of dispute, the referee test method shall be carried out with the specified mercury-in-glass thermometer.

6.4 *Temperature Sensor Centering Device*:

6.4.1 The temperature sensor shall be mounted through a snug-fitting device designed for mechanically centering the sensor in the neck of the flask without vapor leakage. Examples of acceptable centering devices are shown in Figs. 3 and 4. (**Warning**—The use of a plain stopper with a hole drilled through the center is not acceptable for the purpose described in 6.4.1.)

NOTE 3—Other centering devices are also acceptable, as long as they position and hold the temperature sensing device in the proper position in the neck of the distillation column, as shown in Fig. 5 and described in 10.5.

NOTE 4—When running the test by the manual method, products with a low IBP may have one or more readings obscured by the centering device. See also 10.14.3.1.

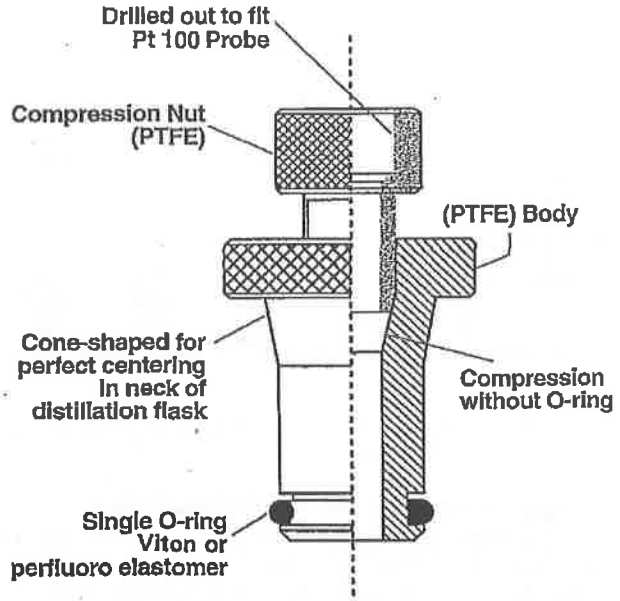


FIG. 4 Example of Centering Device Designs for Straight-Bore Neck Flasks

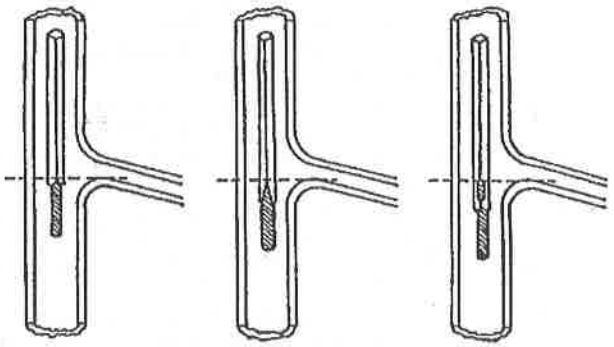


FIG. 5 Position of Thermometer in Distillation Flask

6.5 Automated equipment manufactured in 1999 and later shall be equipped with a device to automatically shut down power to the unit and to spray an inert gas or vapor in the chamber where the distillation flask is mounted in the event of fire.

NOTE 5—Some causes of fires are breakage of the distillation flask, electrical shorts, and foaming and spilling of liquid sample through the top opening of the flask.

6.6 *Barometer*—A pressure measuring device capable of measuring local station pressure with an accuracy of 0.1 kPa (1 mm Hg) or better, at the same elevation relative to sea level as the apparatus in the laboratory. (**Warning**—Do not take readings from ordinary aneroid barometers, such as those used

TABLE 2 Group Characteristics

	Group 1	Group 2	Group 3	Group 4
Sample characteristics				
Distillate type				
Vapor pressure at				
37.8°C, kPa	≥65.6	<65.5	<65.5	<65.5
100°F, psi	≥9.5	<9.5	<9.5	<9.5
(Test Methods D 323, D 4953, D 5190, D 5191, D 5482, IP 69 or IP 394)				
Distillation, IBP °C			≤100	>100
°F			≤212	>212
EP °C	≤250	≤250	>250	>250
°F	≤482	≤482	>482	>482

at weather stations and airports, since these are precorrected to give sea level readings.)

7. Sampling, Storage, and Sample Conditioning

7.1 Determine the Group characteristics that correspond to the sample to be tested (see Table 2). Where the procedure is dependent upon the group, the section headings will be so marked.

7.2 *Sampling*:

7.2.1 Sampling shall be done in accordance with Practice D 4057 or D 4177 and as described in Table 3.

7.2.1.1 *Group 1*—Condition the sample container to below 10°C, preferably by filling the bottle with the cold liquid sample and discarding the first sample. If this is not possible because, for instance, the product to be sampled is at ambient temperature, the sample shall be drawn into a bottle prechilled to below 10°C, in such a manner that agitation is kept at a minimum. Close the bottle immediately with a tight-fitting closure. (**Warning**—Do not completely fill and tightly seal a cold bottle of sample because of the likelihood of breakage on warming.)

7.2.1.2 *Groups 2, 3, and 4*—Collect the sample at ambient temperature. After sampling, close the sample bottle immediately with a tight-fitting closure.

7.2.1.3 If the sample received by the testing laboratory has been sampled by others and it is not known whether sampling has been performed as described in 7.2, the sample shall be assumed to have been so sampled.

7.3 *Sample Storage*:

7.3.1 If testing is not to start immediately after collection, store the samples as indicated in 7.3.2, 7.3.3, and Table 3. All samples shall be stored away from direct sunlight or sources of direct heat.

7.3.2 *Group 1*—Store the sample at a temperature below 10°C.

NOTE 6—If there are no, or inadequate, facilities for storage below 10°C, the sample may also be stored at a temperature below 20°C, provided the operator ensures that the sample container is tightly closed and leak-free.

7.3.3 *Group 2*—Store the sample at a temperature below 10°C.

NOTE 7—If there are no, or inadequate, facilities for storage below 10°C, the sample may also be stored at a temperature below 20°C, provided the operator ensures that the sample container is tightly closed and leak-free.

7.3.4 *Groups 3 and 4*—Store the sample at ambient or lower temperature.

7.4 *Sample Conditioning Prior to Analysis*:

7.4.1 Samples shall be conditioned to the temperature shown in Table 3 before opening the sample container.

7.4.1.1 *Groups 1 and 2*—Samples shall be conditioned to a temperature of less than 10°C (50°F) before opening the sample container.

7.4.1.2 *Groups 3 and 4*—If the sample is not fluid at ambient temperature, it is to be heated to a temperature of 9 to 21°C above its pour point (Test Method D 97, D 5949, or D 5985) prior to analysis. If the sample has partially or completely solidified during storage, it shall be vigorously shaken after melting prior to opening the sample container to ensure homogeneity.

7.4.1.3 If the sample is not fluid at room temperature, the temperature ranges shown in Table 3 for the flask and for the sample do not apply.

7.5 *Wet Samples*:

7.5.1 Samples of materials that visibly contain water are not suitable for testing. If the sample is not dry, obtain another sample that is free from suspended water.

7.5.2 *Groups 1 and 2*—If such a sample cannot be obtained, the suspended water can be removed by maintaining the sample at 0 to 10°C, adding approximately 10 g of anhydrous sodium sulfate per 100 mL of sample, shaking the mixture for approximately 2 min, and then allowing the mixture to settle for approximately 15 min. Once the sample shows no visible signs of water, use a decanted portion of the sample, maintained between 1 and 10°C, for the analysis. Note in the report that the sample has been dried by the addition of a desiccant.

NOTE 8—Suspended water in hazy samples in Groups 1 and 2 can be removed by the addition of anhydrous sodium sulfate and separating the liquid sample from the drying agent by decanting without statistically affecting the results of the test.[4]

7.5.3 *Groups 3 and 4*—In cases in which a water-free sample is not practical, the suspended water can be removed by shaking the sample with anhydrous sodium sulfate or other suitable drying agent and separating it from the drying agent by decanting. Note in the report that the sample has been dried by the addition of a desiccant.

8. Preparation of Apparatus

8.1 Refer to Table 1 and prepare the apparatus by choosing the appropriate distillation flask, temperature measuring device, and flask support board, as directed for the indicated group. Bring the temperature of the receiving cylinder, the flask, and the condenser bath to the indicated temperature.

8.2 Make any necessary provisions so that the temperature of the condenser bath and the receiving cylinder will be maintained at the required temperatures. The receiving cylinder shall be in a bath such that either the liquid level is at least

[4] Supporting data have been filed at ASTM International Headquarters and may be obtained by requesting Research Report RR: D02-1455.

TABLE 3 Sampling, Storage, and Sample Conditioning

		Group 1	Group 2	Group 3	Group 4
Temperature of sample bottle	°C	<10			
	°F	<50			
Temperature of stored sample	°C	<10[A]	<10	ambient	ambient
	°F	<50[A]	<50	ambient	ambient
Temperature of sample after conditioning prior to analysis	°C	<10	<10	Ambient or 9 to 21°C above pour point[B]	Ambient or
	°F	<50	<50	Ambient or 48 to 70°F above pour point[B]	Ambient or
If sample is wet		resample	resample	dry in accordance with 7.5.3	
If resample is still wet[C]		dry in accordance with 7.5.2			

[A] Under certain circumstances, samples can also be stored at temperatures below 20°C (68°F). See also 7.3.2 and 7.3.3.
[B] If sample is (semi)-solid at ambient temperature, see also 10.3.1.1.
[C] If sample is known to be wet, resampling may be omitted. Dry sample in accordance with 7.5.2 and 7.5.3.

as high as the 100-mL mark or the entire receiving cylinder is surrounded by an air circulation chamber.

8.2.1 *Groups 1, 2, and 3*—Suitable media for low temperature baths include, but are not limited to, chopped ice and water, refrigerated brine, and refrigerated ethylene glycol.

8.2.2 *Group 4*—Suitable media for ambient and higher bath temperatures include, but are not limited to, cold water, hot water, and heated ethylene glycol.

8.3 Remove any residual liquid in the condenser tube by swabbing with a piece of soft, lint-free cloth attached to a cord or wire.

9. Calibration and Standardization

9.1 *Temperature Measurement System*—Temperature measurement systems using other than the specified mercury-in-glass thermometers shall exhibit the same temperature lag, emergent stem effect, and accuracy as the equivalent mercury-in-glass thermometer. Confirmation of the calibration of these temperature measuring systems shall be made at intervals of not more than six months, and after the system has been replaced or repaired.

9.1.1 The accuracy and the calibration of the electronic circuitry or computer algorithms, or both, shall be verified by the use of a standard precision resistance bench. When performing this verification, no algorithms shall be used to correct the temperature for lag and the emergent stem effect (see manufacturer's instructions).

9.1.2 Verification of the calibration of temperature measuring devices shall be conducted by distilling toluene in accordance with Group 1 of this test method and comparing the 50 % recovered temperature with that shown in Table 4.[5]

9.1.2.1 If the temperature reading is not within the values shown in Table 4 for the respective apparatus being used (see Note 10 and Table 4), the temperature measurement system shall be considered defective and shall not be used for the test.

NOTE 9—Toluene is used as a verification fluid for calibration; it will yield almost no information on how well an electronic measurement system simulates the temperature lag of a liquid-in-glass thermometer.

9.1.2.2 Reagent grade toluene and hexadecane (cetane), conforming to the specifications of the Committee on Analytical Reagents of the American Chemical Society,[6] shall be used. However, other grades may also be used, provided it is first ascertained that the reagent is of sufficient purity to permit its use without lessening the accuracy of the determination.

NOTE 10—At 101.3 kPa, toluene is shown in reference manuals as boiling at 110.6°C when measured using a partial immersion thermometer. Because this test method uses thermometers calibrated for total immersion, the results typically will be lower and, depending on the thermometer and the situation, may be different for each thermometer. At 101.3 kPa, hexadecane is shown in reference manuals as boiling at 287.0°C when measured using a partial immersion thermometer. Because this test method uses thermometers calibrated for total immersion, the results typically will be lower, and, depending on the thermometer and the situation, may be different for each thermometer.

9.1.3 A procedure to determine the magnitude of the temperature lag is described in Annex A3.

9.1.4 A procedure to emulate the emergent stem effect is described in Appendix X4.

9.1.5 To verify the calibration of the temperature measurement system at elevated temperatures, use hexadecane. The temperature measurement system shall indicate, at 50% recovered, a temperature comparable to that shown in Table 4 for the respective apparatus under Group 4 distillation conditions.

NOTE 11—Because of the high melting point of hexadecane, Group 4 verification distillations will have to be carried out with condenser temperatures >20°C.

9.2 *Automated Method*:

9.2.1 *Level Follower*—For an automated distillation apparatus, the level follower/recording mechanism of the apparatus shall have a resolution of 0.1 mL or better with a maximum error of 0.3 mL between the 5 and 100 mL points. The calibration of the assembly shall be verified in accordance with manufacturer's instructions at intervals of not more than three months and after the system has been replaced or repaired.

NOTE 12—The typical calibration procedure involves verifying the output with the receiver containing 5 and 100 mL of material respectively.

9.2.2 *Barometric Pressure*—At intervals of not more than six months, and after the system has been replaced or repaired,

[5] Supporting data have been filed at ASTM International Headquarters and may be obtained by requesting Research Report RR: D02–1580.

[6] *Reagent Chemicals, American Chemical Society Specifications*, American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see *Analar Standards for Laboratory Chemicals*, BDH Ltd., Poole, Dorset, U.K., and the *United States Pharmacopeia and National Formulary*, U.S. Pharmacopeial Convention, Inc. (USPC), Rockville, MD.

TABLE 4 True and Min and Max D 86 50 % Recovered Boiling Points (°C)[A]

		Manual		Automated	
		Distillation conditions min D 86 50 % boiling point	Distillation conditions max D 86 50 % boiling point	Distillation conditions min D 86 50 % boiling point	Distillation conditions max D 86 50 % boiling point
Toluene	ASTM/IP true boiling point	Group 1, 2, and 3	Group 1, 2, and 3	Group 1, 2, and 3	Group 1, 2, and 3
	110.6	105.9	111.8	108.5	109.7
Hexadecane	ASTM/IP true boiling point	Group 4	Group 4	Group 4	Group 4
	287.0	272.2	283.1	277.0	280.0

[A] The manual and automated temperatures show in this table are the values for the 95 % tolerance interval for the 99 % population coverage. The proposed tolerance is approximately 3 × sigma. Information on the values in this table can be found in RR:D02–1580.

the barometric reading of the instrument shall be verified against a barometer, as described in 6.6.

10. Procedure

10.1 Record the prevailing barometric pressure.

10.2 *Groups 1 and 2*—Fit a low range thermometer provided with a snug-fitting cork or stopper of silicone rubber, or equivalent polymeric material, tightly into the neck of the sample container and bring the temperature of the sample to the temperature indicated in Table 3.

10.3 *Groups 1, 2, 3, and 4*—Check that the temperature of the sample is as shown in Table 3. Pour the specimen precisely to the 100-mL mark of the receiving cylinder, and transfer the contents of the receiving cylinder as completely as practical into the distillation flask, ensuring that none of the liquid flows into the vapor tube.

NOTE 13—It is important that the difference between the temperature of the specimen and the temperature of the bath around the receiving cylinder is as small as practically possible. A difference of 5°C can make a difference of 0.7 mL.

10.3.1 *Groups 3 and 4*—If the sample is not fluid at ambient temperature, it is to be heated to a temperature between 9 and 21°C above its pour point (Test Methods D 97, D 5949, D 5950, or D 5985) prior to analysis. If the sample has partially or completely solidified in the intervening period, it shall be vigorously shaken after melting, and prior to sampling, to ensure homogeneity.

10.3.1.1 If the sample is not fluid at ambient temperatures, disregard the temperature range shown in Table 1 for the receiving cylinder and sample. Prior to analysis, heat the receiving cylinder to approximately the same temperature as the sample. Pour the heated specimen precisely to the 100-mL mark of the receiving cylinder, and transfer the contents of the receiving cylinder as completely as practical into the distillation flask, ensuring that none of the liquid flows into the vapor tube.

NOTE 14—Any material that evaporates during the transfer will contribute to the loss; any material that remains in the receiving cylinder will contribute to the observed recovery volume at the time of the IBP.

10.4 If the sample can be expected to demonstrate irregular boiling behavior, that is, bumping, add a few boiling chips to the specimen. The addition of a few boiling chips is acceptable for any distillation.

10.5 Fit the temperature sensor through a snug-fitting device, as described in 6.4, to mechanically center the sensor in the neck of the flask. In the case of a thermometer, the bulb is centered in the neck and the lower end of the capillary is level with the highest point on the bottom of the inner wall of the vapor tube (see Fig. 5). In the case of a thermocouple or resistance thermometer, follow the manufacturer's instructions as to placement (see Fig. 6).

NOTE 15—If vacuum grease is used on the mating surface of the centering device, use the minimum amount of grease that is practical.

10.6 Fit the flask vapor tube, provided with a snug-fitting cork or rubber stopper of silicone, or equivalent polymeric material, tightly into the condenser tube. Adjust the flask in a vertical position so that the vapor tube extends into the condenser tube for a distance from 25 to 50 mm. Raise and adjust the flask support board to fit it snugly against the bottom of the flask.

10.7 Place the receiving cylinder that was used to measure the specimen, without drying the inside of the cylinder, into its temperature-controlled bath under the lower end of the condenser tube. The end of the condenser tube shall be centered in the receiving cylinder and shall extend therein for a distance of at least 25 mm, but not below the 100-mL mark.

10.8 *Initial Boiling Point*:

10.8.1 *Manual Method*—To reduce evaporation loss of the distillate, cover the receiving cylinder with a piece of blotting paper, or similar material, that has been cut to fit the condenser tube snugly. If a receiver deflector is being used, start the distillation with the tip of the deflector just touching the wall of the receiving cylinder. If a receiver deflector is not used, keep the drip tip of the condenser away from the wall of the receiving cylinder. Note the start time. Observe and record the IBP to the nearest 0.5°C (1.0°F). If a receiver deflector is not being used, immediately move the receiving cylinder so that the tip of the condenser touches its inner wall.

10.8.2 *Automated Method*—To reduce evaporation loss of the distillate, use the device provided by the instrument manufacturer for this purpose. Apply heat to the distillation flask and contents with the tip of the receiver deflector just touching the wall of the receiving cylinder. Note the start time. Record the IBP to the nearest 0.1°C (0.2°F).

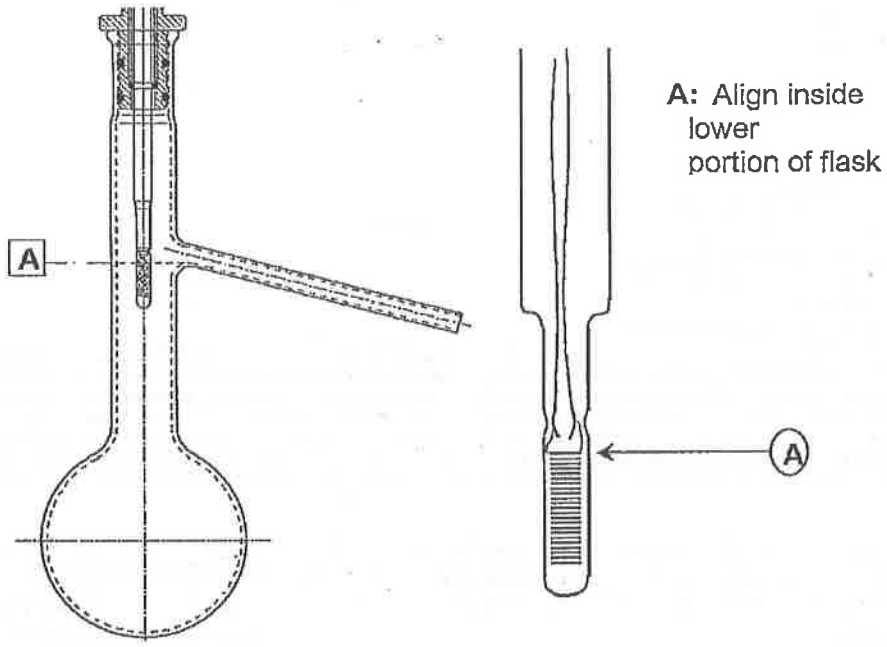


FIG. 6 Example of Recommended Placement of Pt-100 Probe Relative to Distillation Flask Sidearm for Automated D 86 Distillation Instrument

10.9 Regulate the heating so that the time interval between the first application of heat and the IBP is as specified in Table 5.

10.10 Regulate the heating so that the time from IBP to 5 or 10 % recovered is as indicated in Table 5.

10.11 Continue to regulate the heating so that the uniform average rate of condensation from 5 or 10 % recovered to 5 mL residue in the flask is 4 to 5 mL per min. (**Warning**—Due to the configuration of the boiling flask and the conditions of the test, the vapor and liquid around the temperature sensor are not in thermodynamic equilibrium. The distillation rate will consequently have an effect on the measured vapor temperature. The distillation rate shall, therefore, be kept as constant as possible throughout the test.)

NOTE 16—When testing gasoline samples, it is not uncommon to see the condensate suddenly form non-miscible liquid phases and bead up on the temperature measuring device and in the neck of the boiling flask at a vapor temperature of around 160°C. This may be accompanied by a sharp (about 3°C) dip in the vapor temperature and a drop in the recovery rate. The phenomenon, which may be due to the presence of trace water in the sample, may last for 10 to 30 s before the temperature recovers and the condensate starts flowing smoothly again. This point is sometimes colloquially referred to as the Hesitation Point.

10.12 Repeat any distillation that did not meet the requirements described in 10.9, 10.10, and 10.11.

10.13 If a decomposition point, as described in 3.1.3, is observed, discontinue the heating and proceed as directed in 10.17.

10.14 In the interval between the IBP and the end of the distillation, observe and record data necessary for the calculation and reporting of the results of the test as required by the specification involved, or as previously established for the sample under test. These observed data can include temperature readings at prescribed percentages recovered or percentages recovered at prescribed temperature readings, or both.

10.14.1 *Manual Method*—Record all volumes in the graduated cylinder to the nearest 0.5 mL, and all temperature readings to the nearest 0.5°C (1.0°F).

10.14.2 *Automated Method*—Record all volumes in the receiving cylinder to the nearest 0.1 mL, and all temperature readings to the nearest 0.1°C (0.2°F).

10.14.3 *Group 1, 2, 3, and 4*—In cases in which no specific data requirements have been indicated, record the IBP and the EP (FBP) or the dry point, or both, and temperature readings at 5, 15, 85, and 95 % recovered, and at each 10 % multiple of volume recovered from 10 to 90, inclusive.

10.14.3.1 *Group 4*—When a high range thermometer is used in testing aviation turbine fuels and similar products, pertinent thermometer readings can be obscured by the centering device. If these readings are required, perform a second distillation in accordance with Group 3. In such cases, reading from a low range thermometer can be reported in place of the obscured high range thermometer readings, and the test report shall so indicate. If, by agreement, the obscured readings are waived, the test report shall so indicate.

10.14.4 When it is required to report the temperature reading at a prescribed percent evaporated or recovered for a sample that has a rapidly changing slope of the distillation curve in the region of the prescribed percent evaporated or recovered reading, record temperature readings at every 1 % recovered. The slope is considered rapidly changing if the

TABLE 5 Conditions During Test Procedure

		Group 1	Group 2	Group 3	Group 4
Temperature of cooling bath[A]	°C	0–1	0–5	0–5	0–60
	°F	32–34	32–40	32–40	32–140
Temperature of bath around receiving cylinder	°C	13–18	13–18	13–18	±3
	°F	55–65	55–65	55–65	±5 of charge temperature
Time from first application of heat to initial boiling point, min		5–10	5–10	5–10	5–15
Time from initial boiling point to 5 % recovered, s to 10 % recovered, min		60–100	60–100		
Uniform average rate of condensation from 5 % recovered to 5 mL in flask, mL/min		4–5	4–5	4–5	4–5
Time recorded from 5 mL residue to end point, min		5 max	5 max	5 max	5 max

[A] the proper condenser bath temperature will depend upon the wax content of the sample and of its distillation fractions. The test is generally performed using one single condenser temperature. Wax formation in the condenser can be deduced from (*a*) the presence of wax particles in the distillate coming off the drip tip, (*b*) a higher distillation loss than what would be expected based on the initial boiling point of the specimen, (*c*) an erratic recovery rate and (*d*) the presence of wax particles during the removal of residual liquid by swabbing with a lint-free cloth (see 8.3). The minimum temperature that permits satisfactory operation shall be used. In general, a bath temperature in the 0 to 4°C range is suitable for kerosine, Grade No. 1 fuel oil and Grade No. 1-D diesel fuel oil. In some cases involving Grade No. 2 fuel oil, Grade No. 2-D diesel fuel oil, gas oils and similar distillates, it may be necessary to hold the condenser bath temperature in the 38 to 60°C range.

change in slope (C) of the data points described in 10.14.2 in that particular area is greater than 0.6 (change of slope (F) is greater than 1.0) as calculated by Eq 1 (Eq 2).

$$\text{Change of Slope } (C) = (C_2 - C_1)/(V_2 - V_1) - (C_3 - C_2)/(V_3 - V_2) \quad (1)$$

$$\text{Change of Slope } (F) = (F_2 - F_1)/(V_2 - V_1) - (F_3 - F_2)/(V_3 - V_2) \quad (2)$$

where:

C_1 = temperature at the volume % recorded one reading prior to the volume % in question, °C,
C_2 = temperature at the volume % recorded in question, °C,
C_3 = temperature at the volume % recorded following the volume % in question, °C,
F_1 = temperature at the volume % recorded one reading prior to the volume % in question, °F,
F_2 = temperature at the volume % recorded in question, °F,
F_3 = temperature at the volume % recorded following the volume % in question, °F,
V_1 = volume % recorded one reading prior to the volume % in question,
V_2 = volume % recorded at the volume % in question, and
V_3 = volume % recorded following the volume % in question.

10.15 When the residual liquid in the flask is approximately 5 mL, make a final adjustment of the heat. The time from the 5 mL of liquid residue in the flask to the EP (FBP) shall be within the limits prescribed in Table 5. If this condition is not satisfied, repeat the test with appropriate modification of the final heat adjustment.

NOTE 17—Since it is difficult to determine when there is 5 mL of boiling liquid left in the flask, this time is determined by observing the amount of liquid recovered in the receiving cylinder. The dynamic holdup has been determined to be approximately 1.5 mL at this point. If there are no front end losses, the amount of 5 mL in the flask can be assumed to correspond with an amount of 93.5 mL in the receiving cylinder. This amount has to be adjusted for the estimated amount of front end loss.

10.15.1 If the actual front end loss differs more than 2 mL from the estimated value, the test shall be rerun.

10.16 Observe and record the EP (FBP) or the dry point, or both, as required, and discontinue the heating.

10.17 Allow the distillate to drain into the receiving cylinder, after heating has been discontinued.

10.17.1 *Manual Method*—While the condenser tube continues to drain into the graduated cylinder, observe and note the volume of condensate to the nearest 0.5 mL at 2 min intervals until two successive observations agree. Measure the volume in the receiving cylinder accurately, and record it to the nearest 0.5 mL.

10.17.2 *Automated Method*—The apparatus shall continually monitor the recovered volume until this volume changes by no more than 0.1 mL in 2 min. Record the volume in the receiving cylinder accurately to the nearest 0.1 mL.

10.18 Record the volume in the receiving cylinder as percent recovery. If the distillation was previously discontinued under the conditions of a decomposition point, deduct the percent recovered from 100, report this difference as the sum of percent residue and percent loss, and omit the procedure given in 10.19.

10.19 After the flask has cooled and no more vapor is observed, disconnect the flask from the condenser, pour its contents into a 5-mL graduated cylinder, and with the flask suspended over the cylinder, allow the flask to drain until no appreciable increase in the volume of liquid in the cylinder is observed. Measure the volume in the graduated cylinder to the nearest 0.1 mL, and record as percent residue.

10.19.1 If the 5-mL graduated cylinder does not have graduations below 1 mL and the volume of liquid is less than 1 mL, prefill the cylinder with 1 mL of a heavy oil to allow a better estimate of the volume of the material recovered.

10.19.1.1 If a residue greater than expected is obtained, and the distillation was not purposely terminated before the EP,

check whether adequate heat was applied towards the end of the distillation and whether conditions during the test conformed to those specified in Table 5. If not, repeat test.

NOTE 18—The distillation residues of this test method for gasoline, kerosine, and distillate diesel are *typically* 0.9–1.3, 0.9–1.3, and 1.0–1.4 volume %, respectively.

NOTE 19—The test method is not designed for the analysis of distillate fuels containing appreciable quantities of residual material (see 1.2).

10.19.2 *Groups 1, 2, 3, and 4*—Record the volume in the 5-mL graduated cylinder, to the nearest 0.1 mL, as percent residue.

10.20 If the intent of the distillation is to determine the percent evaporated or percent recovered at a predetermined corrected temperature reading, modify the procedure to conform to the instructions described in Annex A4.

10.21 Examine the condenser tube and the side arm of the flask for waxy or solid deposits. If found, repeat the test after making adjustments described in Footnote A of Table 5.

11. Calculations

11.1 The percent total recovery is the sum of the percent recovery (see 10.18) and the percent residue (see 10.19). Deduct the percent total recovery from 100 to obtain the percent loss.

11.2 Do not correct the barometric pressure for meniscus depression, and do not adjust the pressure to what it would be at sea level.

NOTE 20—The observed barometric reading does not have to be corrected to a standard temperature and to standard gravity. Even without performing these corrections, the corrected temperature readings for the same sample between laboratories at two different locations in the world will, in general, differ less than 0.1°C at 100°C. Almost all data obtained earlier have been reported at barometric pressures that have not been corrected to standard temperature and to standard gravity.

11.3 Correct temperature readings to 101.3 kPa (760 mm Hg) pressure. Obtain the correction to be applied to each temperature reading by means of the Sydney Young equation as given in Eq 3, Eq 4, or Eq 5, as appropriate, or by the use of Table 6. For Celsius temperatures:

$$C_c = 0.0009\,(101.3 - P_k)\,(273 + t_c) \quad (3)$$

$$C_c = 0.00012\,(760 - P)\,(273 + t_c) \quad (4)$$

For Fahrenheit temperatures:

$$C_f = 0.00012\,(760 - P)\,(460 + t_f) \quad (5)$$

where:

t_c = the observed temperature reading in °C,
t_f = the observed temperature reading in °F,
C_c and C_f = corrections to be added algebraically to the observed temperature readings,
P_k = barometric pressure, prevailing at the time and location of the test, kPa, and
P = barometric pressure, prevailing at the time and location of the test, mm Hg.

After applying the corrections and rounding each result to the nearest 0.5°C (1.0°F) or 0.1°C (0.2°F), as appropriate to the apparatus being used, use the corrected temperature readings in all further calculations and reporting.

TABLE 6 Approximate Thermometer Reading Correction

Temperature Range		Correction[A] per 1.3 kPa (10 mm Hg) Difference in Pressure	
°C	°F	°C	°F
10–30	50–86	0.35	0.63
30–50	86–122	0.38	0.68
50–70	122–158	0.40	0.72
70–90	158–194	0.42	0.76
90–110	194–230	0.45	0.81
110–130	230–266	0.47	0.85
130–150	266–302	0.50	0.89
150–170	302–338	0.52	0.94
170–190	338–374	0.54	0.98
190–210	374–410	0.57	1.02
210–230	410–446	0.59	1.07
230–250	446–482	0.62	1.11
250–270	482–518	0.64	1.15
270–290	518–554	0.66	1.20
290–310	554–590	0.69	1.24
310–330	590–626	0.71	1.28
330–350	626–662	0.74	1.33
350–370	662–698	0.76	1.37
370–390	698–734	0.78	1.41
390–410	734–770	0.81	1.46

[A] Values to be added when barometric pressure is below 101.3 kPa (760 mm Hg) and to be subtracted when barometric pressure is above 101.3 kPa.

NOTE 21—Temperature readings are not corrected to 101.3 kPa (760 mm Hg) when product definitions, specifications, or agreements between the parties involved indicate, specifically, that such correction is not required or that correction shall be made to some other base pressure.

11.4 Correct the actual loss to 101.3 kPa (760 mm Hg) pressure when temperature readings are corrected to 101.3 kPa pressure. The corrected loss, L_c, is calculated from Eq 6 or Eq 7, as appropriate, or can be read from the tables presented as Fig. X3.1 or Fig. X3.2.

$$L_c = 0.5 + (L - 0.5)/\{1 + (101.3 - P_k)/8.00\} \quad (6)$$

$$L_c = 0.5 + (L - 0.5)/\{1 + (760 - P)/60.0\} \quad (7)$$

where:

L = observed loss,
L_c = corrected loss,
P_k = pressure, kPa, and
P = pressure, mm Hg.

NOTE 22—Eq 6 and 7 above have been derived from the data in Table 7 and Eqs 5 and 6 in Test Method D 86 – 95 and earlier versions. It is probable that Eq 6 and 7 shown were the original empirical equations from which the table and equations in the Test Method D 86 – 95 and earlier versions were derived.

11.4.1 Calculate the corresponding corrected percent recovery in accordance with the following equation:

$$R_c = R + (L - L_c) \quad (8)$$

where:

L = percent loss or observed loss,
L_c = corrected loss,
R = percent recovery, and
R_c = corrected percent recovery.

TABLE 7 Data Points for Determining Slope, S_C or S_F

Slope at %	IBP	5	10	20	30	40	50	60	70	80	90	95	EP
T_L at %	0	0	0	10	20	30	40	50	60	70	80	90	95
T_U at %	5	10	20	30	40	50	60	70	80	90	90	95	V_{EP}
V_U- V_L	5	10	20	20	20	20	20	20	20	20	10	5	V_{EP}–95

11.5 To obtain the percent evaporated at a prescribed temperature reading, add the percent loss to each of the observed percent recovered at the prescribed temperature readings, and report these results as the respective percent evaporated, that is:

$$P_e = P_r + L \quad (9)$$

where:
L = observed loss,
P_e = percent evaporated, and
P_r = percent recovered.

11.6 To obtain temperature readings at prescribed percent evaporated, and if no recorded temperature data is available within 0.1 volume % of the prescribed percent evaporated, use either of the two following procedures, and indicate on the report whether the arithmetical procedure or the graphical procedure has been used.

11.6.1 *Arithmetical Procedure*—Deduct the observed loss from each prescribed percent evaporated to obtain the corresponding percent recovered. Calculate each required temperature reading as follows:

$$T = T_L + (T_H - T_L)(R - R_L)/(R_H - R_L) \quad (10)$$

where:
R = percent recovered corresponding to the prescribed percent evaporated,
R_H = percent recovered adjacent to, and higher than R,
R_L = percent recovered adjacent to, and lower than R,
T = temperature reading at the prescribed percent evaporated,
T_H = temperature reading recorded at R_H, and
T_L = temperature reading recorded at R_L.

Values obtained by the arithmetical procedure are affected by the extent to which the distillation graphs are nonlinear. Intervals between successive data points can, at any stage of the test, be no wider than the intervals indicated in 10.18. In no case shall a calculation be made that involves extrapolation.

11.6.2 *Graphical Procedure*—Using graph paper with uniform subdivisions, plot each temperature reading corrected for barometric pressure, if required (see 11.3), against its corresponding percent recovered. Plot the IBP at 0 % recovered. Draw a smooth curve connecting the points. For each prescribed percent evaporated, deduct the distillation loss to obtain the corresponding percent recovered and take from the graph the temperature reading that this percent recovered indicates. Values obtained by graphical interpolation procedures are affected by the care with which the plot is made.

NOTE 23—See Appendix X1 for numerical examples illustrating the arithmetical procedure.

11.6.3 In most automated instruments, temperature-volume data are collected at 0.1 volume % intervals or less and stored in memory. To report a temperature reading at a prescribed percent evaporated, neither of the procedures described in 11.6.1 and 11.6.2 have to be used. Obtain the desired temperature directly from the database as the temperature closest to and within 0.1 volume % of the prescribed percent evaporated.

12. Report

12.1 Report the following information (see Appendix X5 for examples of reports):

12.2 Report the barometric pressure to the nearest 0.1 kPa (1 mm Hg).

12.3 Report all volumetric readings in percentages.

12.3.1 *Manual Method*—Report volumetric readings to the nearest 0.5, and all temperature readings to the nearest 0.5°C (1.0°F).

12.3.2 *Automated Method*—Report volumetric readings to the nearest 0.1, and all temperature readings to the nearest 0.1°C (0.2°F) or less.

12.4 After barometric corrections of the temperature readings have been made, the following data require no further calculation prior to reporting: IBP, dry point, EP (FBP), decomposition point, and all pairs of corresponding values involving percent recovered and temperature readings.

12.4.1 The report shall state if the temperature readings have not been corrected for barometric pressure.

12.5 When the temperature readings have not been corrected to 101.3 kPa (760 mm Hg) pressure, report the percent residue and percent loss as *observed* in accordance with 10.19 and 11.1, respectively.

12.6 Do not use the corrected loss in the calculation of percent evaporated.

12.7 It is advisable to base the report on relationships between temperature readings and percent evaporated when the sample is a gasoline, or any other product classified under Group 1, or in which the percent loss is greater than 2.0. Otherwise, the report can be based on relationships between temperature readings and percent evaporated or percent recovered. Every report must indicate clearly which basis has been used.

12.7.1 In the manual method, if results are given in percent evaporated versus temperature readings, report if the arithmetical or the graphical procedure was used (see 11.6).

12.8 Report if a drying agent, as described in 7.5.2 or 7.5.3, was used.

12.9 Fig. X1.1 is an example of a tabular report. It shows the percent recovered versus the corresponding temperature reading and versus the corrected temperature reading. It also shows the percent loss, the corrected loss, and the percent evaporated versus the corrected temperature reading.

TABLE 9 Repeatability and Reproducibility for Groups 2, 3 and 4 (Manual Method)

	Repeatability[A]		Reproducibility[A]	
	°C	°F	°C	°F
IBP	$1.0+0.35S_C$	$1.9+0.35S_F$	$2.8+0.93S_C$	$5.0+0.93S_F$
5–95 %	$1.0+0.41S_C$	$1.8+0.41S_F$	$1.8+1.33S_C$	$3.3+1.33S_F$
FBP	$0.7+0.36S_C$	$1.3+0.36S_F$	$3.1+0.42S_C$	$5.7+0.42S_F$
% volume at temperature reading	$0.7+0.92/S_C$	$0.7+1.66/S_F$	$1.5+1.78/S_C$	$1.53+3.20/S_F$

[A] Calculate S_C or S_F from 13.2.

13.3.2.1 *GROUP 1*—The difference between two single and independent results obtained by different operators working in different laboratories on identical test material would, in the normal and correct operation of this method, exceed the values calculated from Table 9 in only one case in twenty.[7]

13.3.2.2 *GROUPS 2, 3, and 4*—The difference between two single and independent results obtained by different operators working in different laboratories on identical test material would, in the normal and correct operation of this test method, exceed the values calculated from the data in Table 9 in only one case in twenty.[8]

13.4 *Automated Method*:

13.4.1 *Repeatability*:

13.4.1.1 *GROUP 1*—The difference between successive results obtained by the same operator with the same apparatus under constant operating conditions on identical test material would, in the long run, in the normal and correct operation of this test method, exceed the values calculated from Table 8 in only one case in twenty.

13.4.1.2 *GROUPS 2, 3, and 4*—The difference between successive results obtained by the same operator with the same apparatus under constant operating conditions on identical test material would, in the long run, in the normal and correct operation of this test method, exceed the values calculated from Table 10 in only one case in twenty.

13.4.2 *Reproducibility*:

13.4.2.1 *GROUP 1*—The difference between two single and independent results obtained by different operators working in different laboratories on identical test material would, in the normal and correct operation of this test method, exceed the values calculated from Table 8 in only one case in twenty.[7]

13.4.2.2 *GROUPS 2, 3, and 4*—The difference between two single and independent results obtained by different operators working in different laboratories on identical test material would, in the normal and correct operation of this test method, exceed the values calculated from Table 10 in only one case in twenty.

13.5 *Bias*:

13.5.1 *Bias*—Due to the use of total immersion thermometers, or temperature sensing systems designed to emulate them, the distillation temperatures in this test method are somewhat lower than the true temperatures. The amount of bias depends on the product being distilled and the thermometer used.

13.5.2 *Relative Bias*—There exists a bias between the empirical results of distillation properties obtained by this test method and the true boiling point distillation curve obtained by Test Method D 2892. The magnitude of this bias, and how it relates to test precision, has not been rigorously studied.

13.5.3 *Relative Bias*—An interlaboratory study[5] conducted in 2003 using manual and automated apparatus has concluded that there is no statistical evidence to suggest that there is a bias between manual and automated results.

14. Keywords

14.1 batch distillation; distillates; distillation; laboratory distillation; petroleum products

[7] Precision data obtained from RR study on both manual and automated D 86 units by North American and IP Laboratories.

[8] Table 9 has been derived from the nomographs in Figs. 6 and 7 in ASTM D 86–97.

TABLE 8 Repeatability and Reproducibility for Group 1

Evaporated Point, %	Manual Repeatability[A]		Manual Reproducibility[A]		Automated Repeatability[A]		Automated Reproducibility[A]	
	°C	°F	°C	°F	°C	°F	°C	°F
IBP	3.3	6	5.6	10	3.9	7	7.2	13
5	$1.9+0.86S_C$	$3.4+0.86S_F$	$3.1+1.74S_C$	$5.6+1.74S_F$	$2.1+0.67S_C$	$3.8+0.67S_F$	$4.4+2.0S_C$	$7.9+2.0S_F$
10	$1.2+0.86S_C$	$2.2+0.86S_F$	$2.0+1.74S_C$	$3.6+1.74S_F$	$1.7+0.67S_C$	$3.0+0.67S_F$	$3.3+2.0S_C$	$6.0+2.0S_F$
20	$1.2+0.86S_C$	$2.2+0.86S_F$	$2.0+1.74S_C$	$3.6+1.74S_F$	$1.1+0.67S_C$	$2.0+0.67S_F$	$3.3+2.0S_C$	$6.0+2.0S_F$
30–70	$1.2+0.86S_C$	$2.2+0.86S_F$	$2.0+1.74S_C$	$3.6+1.74S_F$	$1.1+0.67S_C$	$2.0+0.67S_F$	$2.6+2.0S_C$	$4.7+2.0S_F$
80	$1.2+0.86S_C$	$2.2+0.86S_F$	$2.0+1.74S_C$	$3.6+1.74S_F$	$1.1+0.67S_C$	$2.0+0.67S_F$	$1.7+2.0S_C$	$3.0+2.0S_F$
90	$1.2+0.86S_C$	$2.2+0.86S_F$	$0.8+1.74S_C$	$1.4+1.74S_F$	$1.1+0.67S_C$	$2.0+0.67S_F$	$0.7+2.0S_C$	$1.2+2.0S_F$
95	$1.2+0.86S_C$	$2.2+0.86S_F$	$1.1+1.74S_C$	$1.9+1.74S_F$	$2.5+0.67S_C$	$4.5+0.67S_F$	$2.6+2.0S_C$	$4.7+2.0S_F$
FBP	3.9	7	7.2	13	4.4	8	8.9	16

[A] S_C or S_F is the average slope (or rate of change) calculated in accordance with 13.2.

13. Precision and Bias

13.1 *Precision*:

13.1.1 The precision of this test method has been determined by the statistical examination of interlaboratory test results obtained by 26 laboratories on 14 gasolines, by 4 laboratories on 8 samples of kerosine by the manual procedure, 3 laboratories on 6 samples of kerosine by the automated procedure, and 5 laboratories on 10 samples of diesel fuel by both the manual and automated procedures. Table A1.1 lists which tables and figures are to be used for the different fuel groups, distillation methods, and temperature scales.

13.1.2 The following terms are used in this section: (*1*) r = repeatability and (*2*) R = reproducibility. The value of any of these terms will depend upon whether the calculations were carried out in °C or °F.

13.2 *Slope or Rate of Change of Temperature*:

13.2.1 To determine the precision of a result, it is generally necessary to determine the slope or rate of change of the temperature at that particular point. This variable, denoted as S_C or S_F, is equal to the change in temperature, either in °C or in °F, respectively, per percent recovered or evaporated.

13.2.2 For Group 1 in the manual method and for all groups in the automated method, the precision of the IBP and EP does not require any slope calculation.

13.2.3 With the exception stated in 13.2.2 and in 13.2.4, the slope at any point during the distillation is calculated from the following equations, using the values shown in Table 7:

$$S_C \text{ (or } S_F) = (T_U - T_L) / (V_U - V_L) \quad (11)$$

where:

S_C = is the slope, °C/volume %,
S_F = is the slope, °F/volume %,
T_U = is the upper temperature, °C (or °F),
T_L = is the lower temperature, °C (or °F),
V_U = is the volume % recovered or evaporated corresponding to T_U,
V_L = is the volume % recovered or evaporated corresponding to T_L, and
V_{EP} = is the volume % recovered or evaporated corresponding to the end point.

13.2.4 In the event that the distillation end point occurs prior to the 95 % point, the slope at the end point is calculated as follows:

$$S_C \text{ (or } S_F) = (T_{EP} - T_{HR}) / (V_{EP} - V_{HR}) \quad (12)$$

where:

T_{EP} or T_{HR} is the temperature, in °C or °F at the percent volume recovered indicated by the subscript,

V_{EP} or V_{HR} is the volume % recovered.

13.2.4.1 The subscripts in Eq 12 refer to:

EP = end point
HR = highest reading, either 80 % of 90 %, prior to the end point.

13.2.5 For points between 10 to 85 % recovered which are not shown in Table 7, the slope is calculated as follows:

$$S_C \text{ (or } S_F) = 0.05 \, (T_{(V+10)} - T_{(V-10)}) \quad (13)$$

13.2.6 For samples in Group 1, the precision data reported are based on slope values calculated from percent evaporated data.

13.2.7 For samples in Group 2, 3, and 4, the precision data reported (Table 8) are based on slope values calculated from percent recovered data.

13.2.8 When results are reported as volume % recovered, slope values for the calculation of precision are to be determined from percent recovered data; when results are reported as volume % evaporated slope values are to be determined from % evaporated data.

13.3 *Manual Method*:

13.3.1 *Repeatability*:

13.3.1.1 *GROUP 1*—The difference between successive results obtained by the same operator with the same apparatus under constant operating conditions on identical test material would, in the long run, in the normal and correct operation of this test method, exceed the values calculated from Table 9 in only one case in twenty.

13.3.1.2 *GROUPS 2, 3, and 4*—The difference between successive results obtained by the same operator with the same apparatus under constant operating conditions on identical test material would, in the long run, in the normal and correct operation of this test method, exceed the values calculated from the values in Table 9 in only one case in twenty.

13.3.2 *Reproducibility*:

TABLE 10 Repeatability and Reproducibility for Groups 2, 3 and 4 (Automated)

Collected, %	Repeatability[A]		Reproducibility[A]	
	°C	°F	°C	°F
IBP	3.5	6.3	8.5	15.3
2 %	3.5	6.3	$2.6 + 1.92S_C$	$4.7 + 1.92S_F$
5 %	$1.1 + 1.08S_C$	$2.0 + 1.08S_F$	$2.0 + 2.53S_C$	$3.6 + 2.53S_F$
10 %	$1.2 + 1.42S_C$	$2.2 + 1.42S_F$	$3.0 + 2.64S_C$	$5.4 + 2.64S_F$
20–70 %	$1.2 + 1.42S_C$	$2.2 + 1.42S_F$	$2.9 + 3.97S_C$	$5.2 + 3.97S_F$
80 %	$1.2 + 1.42S_C$	$2.2 + 1.42S_F$	$3.0 + 2.64S_C$	$5.4 + 2.64S_F$
90–95 %	$1.1 + 1.08S_C$	$2.0 + 1.08S_F$	$2.0 + 2.53S_C$	$3.6 + 2.53S_F$
FBP	3.5	6.3	10.5	18.9

[A] S_C or S_F is the average slope (or rate of change) calculated in accordance with 13.5.

ANNEXES

(Mandatory Information)

A1. REPEATABILITY AND REPRODUCIBILITY DEFINITION AIDS

A1.1 Table A1.1 is an aid for determining which repeatability and reproducibility table or section, is to be used.

TABLE A1.1 Summary of Aids for Definition of Repeatability and Reproducibility

Group	Method	Temperature Scale	Table or Section to Use	
			Repeatability	Reproducibility
1	Manual	°C	Table 8	Table 8
		°F	Table 8	Table 8
1	Automated	°C	Table 8	Table 8
		°F	Table 8	Table 8
2,3,4	Manual	°C	Table 9	Table 9
		°F	Table 9	Table 9
2,3,4	Automated	°C	Table 10	Table 10
		°F	Table 10	Table 10

A2. DETAILED DESCRIPTION OF APPARATUS

A2.1 *Distillation Flasks*—Flasks shall be of heat resistant glass, constructed to the dimensions and tolerances shown in Fig. A2.1 and shall otherwise comply with the requirements of Specification E 1405. Flask A (100 mL) may also be constructed with a ground glass joint, in which case the diameter of the neck shall be the same as the 125-mL flask.

NOTE A2.1—For tests specifying dry point, specially selected flasks with bottoms and walls of uniform thickness are desirable.

A2.2 *Condenser and Condenser Bath*—Typical types of condenser and condenser baths are illustrated in Figs. 1 and 2.

A2.2.1 The condenser shall be made of seamless noncorrosive metal tubing, 560 ± 5 mm in length, with an outside diameter of 14 mm and a wall thickness of 0.8 to 0.9 mm.

NOTE A2.2—Brass or stainless steel has been found to be a suitable material for this purpose.

A2.2.2 The condenser shall be set so that 393 ± 3 mm of the tube is in contact with the cooling medium, with 50 ± 3 mm outside the cooling bath at the upper end, and with 114 ± 3 mm outside at the lower end. The portion of the tube projecting at the upper end shall be set at an angle of 75 ± 3° with the vertical. The portion of the tube inside the condenser bath shall be either straight or bent in any suitable continuous smooth curve. The average gradient shall be 15 ± 1° with respect to the horizontal, with no 10-cm section having a gradient outside of the 15 ± 3° range. The projecting lower portion of the condenser tube shall be curved downward for a length of 76 mm and the lower end shall be cut off at an acute angle. Provisions shall be made to enable the flow of the distillate to run down the side of the receiving cylinder. This can be accomplished by using a drip-deflector, which is attached to the outlet of the tube. Alternatively, the lower portion of the condenser tube can be curved slightly backward to ensure

contact with the wall of the receiving cylinder at a point 25 to 32 mm below the top of the receiving cylinder. Fig. A2.3 is a drawing of an acceptable configuration of the lower end of the condenser tube.

A2.2.3 The volume and the design of the bath will depend on the cooling medium employed. The cooling capacity of the bath shall be adequate to maintain the required temperature for the desired condenser performance. A single condenser bath may be used for several condenser tubes.

A2.3 *Metal Shield or Enclosure for Flask.* (Manual units only).

A2.3.1 *Shield for Gas Burner (see* Fig. 1*)*—The purpose of this shield is to provide protection for the operator and yet allow easy access to the burner and to the distillation flask during operation. A typical shield would be 480-mm high, 280-mm long and 200-mm wide, made of sheet metal of 0.8-mm thickness (22 gauge). The shield shall be provided with at least one window to observe the dry point at the end of the distillation.

A2.3.2 *Shield for Electric Heater (see* Fig. 2*)*—A typical shield would be 440-mm high, 200-mm long, and 200-mm wide, made of sheet metal of approximately 0.8-mm thickness (22 gauge) and with a window in the front side. The shield shall be provided with at least one window to observe the dry point at the end of the distillation.

A2.4 *Heat Source:*

A2.4.1 *Gas Burner* (see Fig. 1), capable of bringing over the first drop from a cold start within the time specified and of continuing the distillation at the specified rate. A sensitive manual control valve and gas pressure regulator to give complete control of heating shall be provided.

A2.4.2 *Electric Heater* (see Fig. 2), of low heat retention.

NOTE A2.3—Heaters, adjustable from 0 to 1000 W, have been found to be suitable for this purpose.

A2.5 *Flask Support:*

A2.5.1 *Type 1*—Use a Type 1 flask support with a gas burner (see Fig. 1). This support consists of either a ring support of the ordinary laboratory type, 100 mm or larger in diameter, supported on a stand inside the shield, or a platform adjustable from the outside of the shield. On this ring or platform is mounted a hard board made of ceramic or other heat-resistant material, 3 to 6 mm in thickness, with a central opening 76 to 100 mm in diameter, and outside line dimensions slightly smaller than the inside boundaries of the shield.

A2.5.2 *Type 2*—Use a Type 2 flask support assembly with electric heating (see Fig. 2 as one example). The assembly consists of an adjustable system onto which the electric heater is mounted with provision for placement of a flask support board (see A2.6) above the electric heater. The whole assembly is adjustable from the outside of the shield.

A2.6 *Flask Support Board*—The flask support board shall be constructed of ceramic or other heat-resistant material, 3 to 6 mm in thickness. Flask support boards are classified as A, B, or C, based on the size of the centrally located opening, the dimension of which is shown in Table 1. The flask support board shall be of sufficient dimension to ensure that thermal heat to the flask only comes from the central opening and that extraneous heat to the flask other than through the central opening is minimized. (**Warning**—Asbestos-containing materials shall not be used in the construction of the flask support board.)

A2.7 The flask support board can be moved slightly in different directions on the horizontal plane to position the distillation flask so that direct heat is applied to the flask only through the opening in this board. Usually, the position of the flask is set by adjusting the length of the side-arm inserted into the condenser.

A2.8 Provision shall be made for moving the flask support assembly vertically so that the flask support board is in direct contact with the bottom of the distillation flask during the distillation. The assembly is moved down to allow for easy mounting and removal of the distillation flask from the unit.

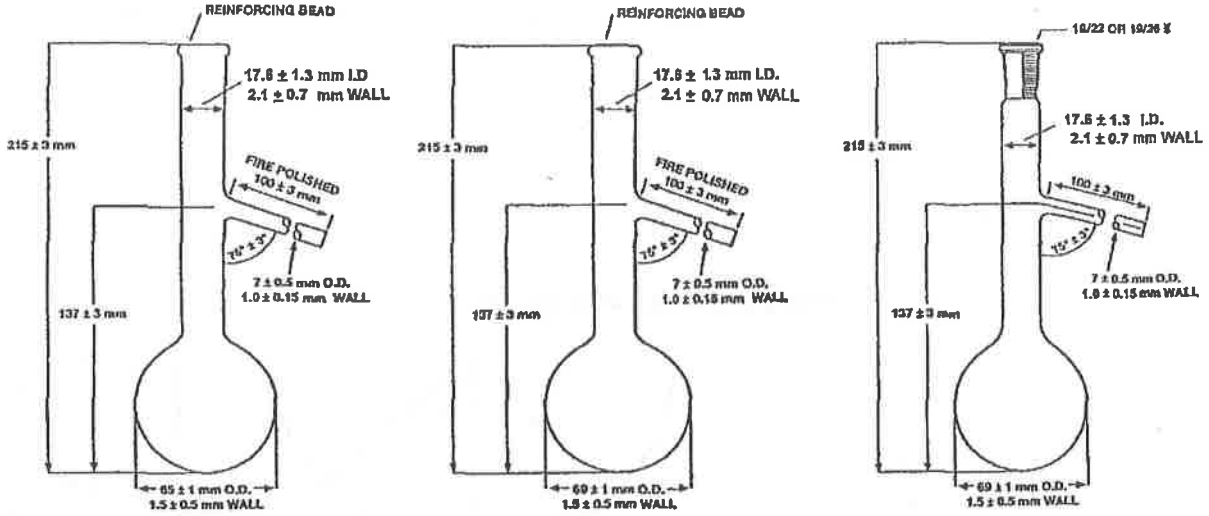
A2.9 *Receiving Cylinders*—The receiving cylinder shall have a capacity to measure and collect 100 mL. The shape of the base shall be such that the receiver does not topple when placed empty on a surface inclined at an angle of 13° from the horizontal.

A2.9.1 *Manual Method*—The cylinder shall be graduated at intervals of 1 mL and have a graduation at the 100-mL mark. Construction details and tolerances for the graduated cylinder are shown in Fig. A2.4.

A2.9.2 *Automated Method*—The cylinder shall conform to the physical specifications described in Fig. A2.4, except that graduations below the 100-mL mark are permitted, as long as they do not interfere with the operation of the level follower. Receiving cylinders for use in automated units may also have a metal base.

A2.9.3 If required, the receiving cylinder shall be immersed during the distillation to above the 100-mL graduation line in a cooling liquid contained in a cooling bath, such as a tall-form beaker of clear glass or transparent plastic. Alternatively, the receiving cylinder may be placed in a thermostated bath air circulation chamber.

A2.10 *Residue Cylinder*—The graduated cylinder shall have a capacity of 5 or 10 mL, with graduations into 0.1 mL subdivisions, beginning at 0.1 mL. The top of the cylinder may be flared, the other properties shall conform to Specification E 1272.



Flask A, 100 mL Flask B, 125 mL Flask B, 125 mL

FIG. A2.1 Flask A, 100 mL, Flask B, 125 mL, and Flask B with Ground Glass Joint, 125 mL

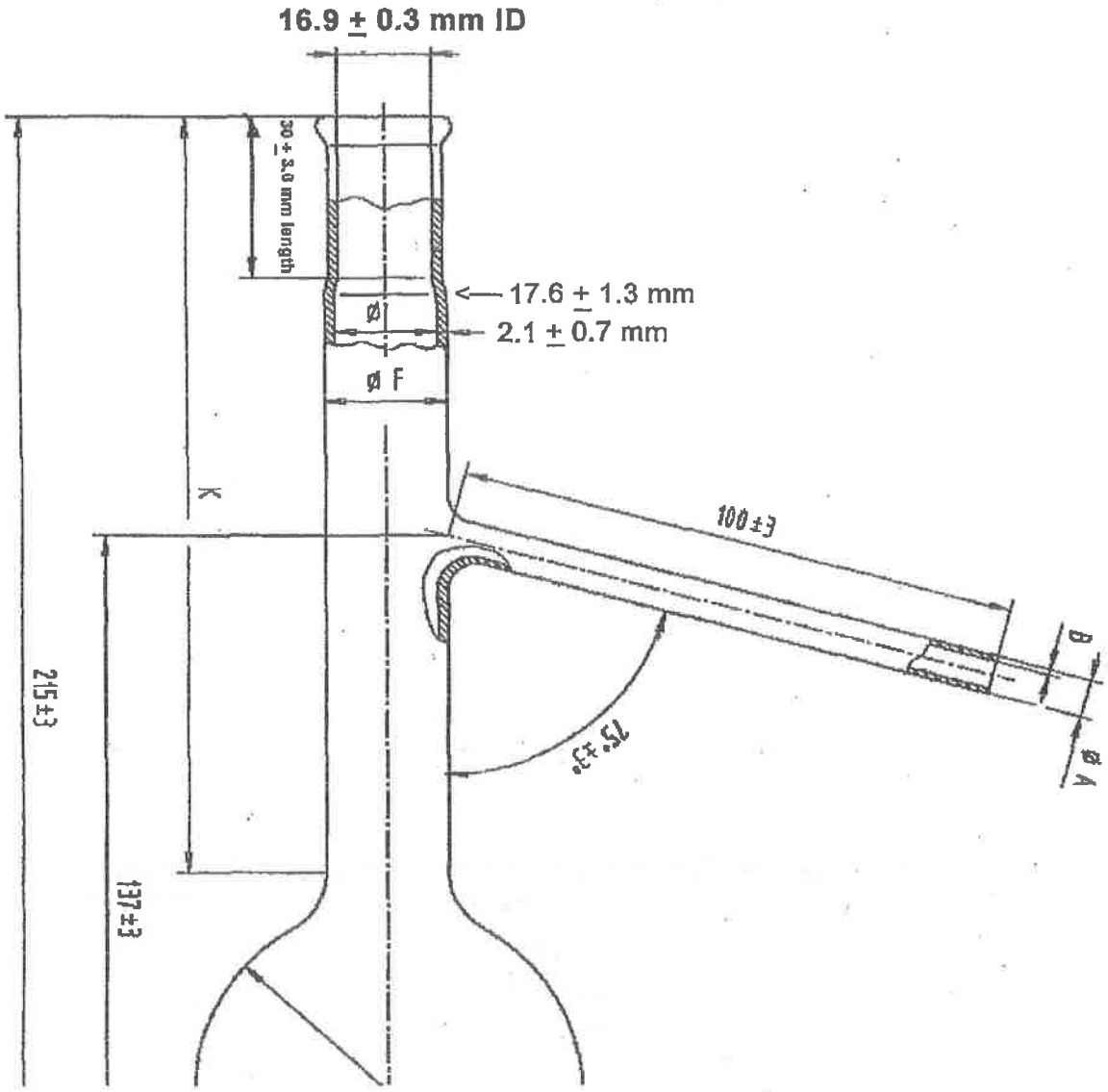
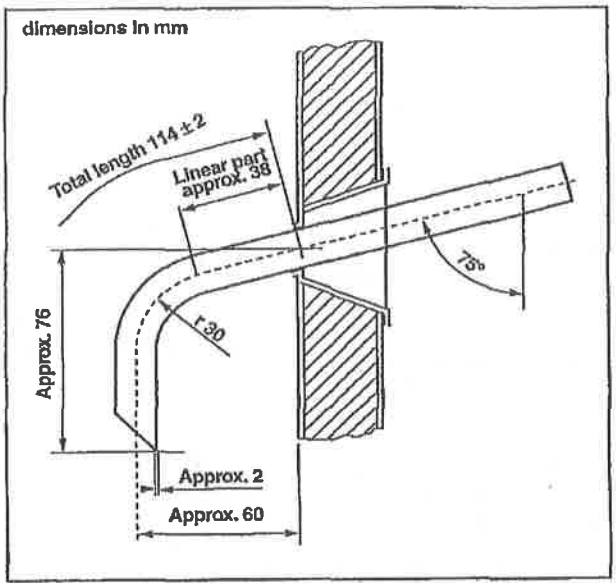
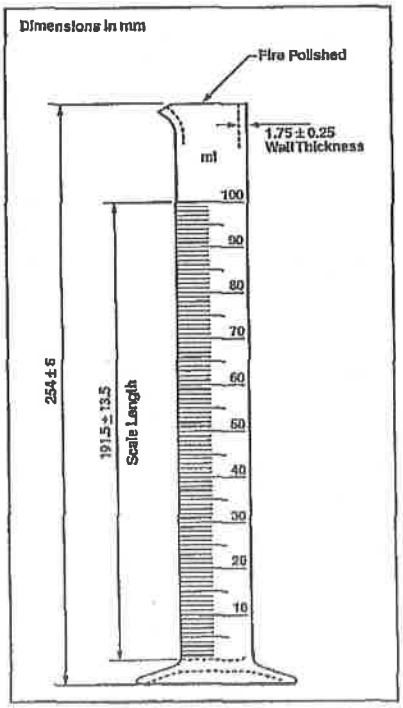


FIG. A2.2 Detail of Upper Neck Section



Lower End of Condenser Tube

FIG. A2.3 Lower End of Condenser Tube



NOTE—1 to 100 mL in 1 mL graduations; tolerance ± 1.0 mL.

FIG. A2.4 100 mL Graduated Cylinder

A3. DETERMINATION OF THE DIFFERENCE IN LAG TIME BETWEEN AN ELECTRONIC TEMPERATURE MEASUREMENT SYSTEM AND A MERCURY-IN-GLASS THERMOMETER

A3.1 The response time of an electronic temperature measuring device is inherently more rapid than that of a mercury-in-glass thermometer. The temperature measuring device assembly in general use, consisting of the sensor and its casing, or an electronic system and its associated software, or both, is so designed that the temperature measuring system will simulate the temperature lag of the mercury-in-glass thermometer.

A3.2 To determine the difference in lag time between such a temperature measuring system and a mercury-in-glass thermometer, analyze a sample such as gasoline, kerosine, jet fuel, or light diesel fuel with the electronic temperature measurement system in place and in accordance with the procedures described in this test method. In most cases this is the standard distillation step performed with an automated unit.

A3.2.1 Do not use a single pure compound, a very narrow boiling range product, or a synthetic blend of less than six compounds for this test.

A3.2.2 Best results are obtained with a sample that is typical of the sample load of the laboratory. Alternatively, use a full-range mixture with a 5 to 95 % boiling range of at least 100°C.

A3.3 Replace the electronic temperature measuring device with a low range or a high range mercury-in-glass thermometer, depending on the boiling range of the sample.

A3.4 Repeat the distillation with this thermometer, and manually record the temperature at the various percent recovered as described in 10.14.

A3.5 Calculate the values for the repeatability for the observed slope ($\Delta T/\Delta V$) for the different readings in the test.

A3.6 Compare the test data obtained using these two temperature measuring devices. The difference at any point shall be equal to, or less than, the repeatability of the method at that point. If this difference is larger, replace the electronic temperature measuring device or adjust the electronics involved, or both.

A4. PROCEDURE TO DETERMINE THE PERCENT EVAPORATED OR PERCENT RECOVERED AT A PRESCRIBED TEMPERATURE READING

A4.1 Many specifications require specific percentages evaporated or recovered at prescribed temperature readings, either as maxima, minima, or ranges. The procedures to determine these values are frequently designated by the terms Exxx or Rxxx, where xxx is the desired temperature.

NOTE A4.1—Regulatory standards on the certification of reformulated gasoline under the complex model procedure require the determination of E 200 and E 300, defined as the percent evaporated fuel at 93.3°C (200°F) and 148.9°C (300°F), respectively. E 158, the percent evaporated at a distillation temperature of 70°C (158°F), is also used in describing fuel volatility characteristics. Other typical temperatures are R 200 for kerosines and R 250 and R 350 for gas oils, where R 200, R 250, and R 350 are the percent recovered fuel at 200°C, 250°C, and 350°C, respectively.

A4.2 Determine the barometric pressure, and calculate the correction to the desired temperature reading using Eq 3, Eq 4, or Eq 5 for t = xxx°C (or t_F = xxx°F).

A4.2.1 *Manual Method*—Determine this correction to 0.5°C (1°F).

A4.2.2 *Automated Method*—Determine this correction to 0.1°C (0.2°F).

A4.3 Determine the expected temperature reading to yield xxx°C (or xxx°F) after the barometric correction. To obtain the expected value, add the absolute value of the calculated correction to the desired temperature if the barometric pressure is above 101.3 kPa. If the barometric pressure is below 101.3 kPa, subtract the absolute value of the calculated correction from the desired temperature.

A4.4 Perform the distillation, as described in Section 10, while taking into account A4.5 and A4.6.

A4.5 *Manual Distillation:*

A4.5.1 In the region between about 10°C below and 10°C above the desired expected temperature reading determined in A4.3 record the temperature reading in intervals of 1 volume %.

A4.5.2 If the intent of the distillation is to solely determine the value of Exxx or Rxxx, discontinue the distillation after at least another 2 mL of distillate have been collected. Otherwise, continue the distillation, as described in Section 10, and determine the observed loss, as described in 11.1.

A4.5.2.1 If the intent of the distillation is to determine the value of Exxx and the distillation was terminated after about 2 mL of distillate was collected beyond the desired temperature, allow the distillate to drain into the receiving graduate. Allow the contents of the flask to cool to below approximately 40°C and then drain its contents into the receiving graduate. Note the volume of product in the receiving graduate to the nearest 0.5 mL at 2 min intervals until two successive observations agree.

A4.5.2.2 The amount recovered in the receiving graduate is the percent recovery. Determine the amount of observed loss by subtracting the percent recovery from 100.0.

A4.6 *Automated Distillation:*

A4.6.1 In the region between about 10°C below and 10°C above the desired expected temperature reading determined in A4.3, collect temperature-volume data at 0.1 volume % intervals or less.

A4.6.2 Continue the distillation, as described in Section 10, and determine the percent loss, as described in 11.1.

A4.7 *Calculations:*

A4.7.1 *Manual Method*—If a volume % recovered reading is not available at the exact temperature calculated in A4.3, determine the percent recovered by interpolation between the two adjacent readings. Either the linear, as described in 11.6.1, or the graphical procedure, as described in 11.6.2, is permitted. The percent recovered is equal to Rxxx.

A4.7.2 *Automated Method*—Report the observed volume to 0.1 volume % corresponding to the temperature closest to the expected temperature reading. This is the percent recovered, or Rxxx.

A4.7.3 *Manual and Automated Methods*—To determine the value of Exxx, add the observed loss to the percent recovered, Rxxx, as determined in A4.7.1 or A4.7.2 and as described in Eq 9.

A4.7.3.1 As prescribed in 12.6, do not use the corrected loss.

A4.8 *Precision:*

A4.8.1 The statistical determination of the precision of the volume % evaporated or recovered at a prescribed temperature has not been directly measured in an interlaboratory program. It can be shown that the precision of the volume % evaporated or recovered at a prescribed temperature is equivalent to the precision of the temperature measurement at that point divided by the rate of change of temperature versus volume % evaporated or recovered. The estimation of precision becomes less precise at high slope values.

A4.8.2 Calculate the slope or rate of change in temperature reading, S_C(or S_F), as described in 13.2 and Eq 11 and using temperature values bracketing the desired temperature.

A4.8.3 Calculate the repeatability, *r*, or the reproducibility, *R*, from the slope, S_C (or S_F), and the data in Table 8, Table 9, or Table 10.

A4.8.4 Determine the repeatability or reproducibility, or both, of the volume % evaporated or recovered at a prescribed temperature from the following formulas:

$$^{r}\text{volume \%} = r/S_C(S_F) \quad \text{(A4.1)}$$

$$^{R}\text{volume \%} = R/S_C(S_F) \quad \text{(A4.2)}$$

where:

^{r}volume % = repeatability of the volume % evaporated or recovered,

^{R}volume % = reproducibility of the volume % evaporated or recovered,

r = repeatability of the temperature at the prescribed temperature at the observed percent distilled,

R = reproducibility of the temperature at the prescribed temperature at the observed percent distilled, and

$S_C(S_F)$ = rate of change in temperature reading in °C (°F) per the volume % evaporated or recovered.

A4.8.5 Examples on how to calculate the repeatability and the reproducibility are shown in Appendix X2.

APPENDIXES

(Nonmandatory Information)

X1. EXAMPLES ILLUSTRATING CALCULATIONS FOR REPORTING OF DATA

X1.1 The observed distillation data used for the calculation of the examples below are shown in the first three columns of Fig. X1.1.

X1.1.1 Temperature readings corrected to 101.3 kPa (760 mm Hg) pressure (see 11.3) are as follows:

$$\text{correction } (°C) = 0.0009\,(101.3 - 98.6)\,(273 + t_c) \quad \text{(X1.1)}$$

$$\text{correction } (°F) = 0.00012\,(760 - 740)\,(460 + t_f) \quad \text{(X1.2)}$$

X1.1.2 Loss correction to 101.3 kPa (see 11.4) are as follows. The data for the examples are taken from Fig. X1.1.

$$\text{corrected loss} = (0.5 + (4.7 - 0.5)/\{1 + (101.3 - 98.6)/8.0\} = 3.6 \quad \text{(X1.3)}$$

X1.1.3 Recovery correction to 101.3 kPa (see 11.4.1) are as follows:

$$\text{corrected recovery} = 94.2 + (4.7 - 3.6) = 95.3 \quad \text{(X1.4)}$$

X1.2 *Temperature Readings at Prescribed Percent Evaporated:*

X1.2.1 Temperature reading at 10 % evaporated (4.7 % observed loss = 5.3 % recovered) (see 11.6.1) are as follows:

$$T_{10E}(°C) = 33.7 + [(40.3 - 33.7)\,(5.3 - 5)/(10 - 5)] = 34.1°C \quad \text{(X1.5)}$$

$$T_{10E}(°F) = 92.7 + [(104.5 - 92.7)\,(5.3 - 5)/(10 - 5)] = 93.1°F \quad \text{(X1.6)}$$

X1.2.2 Temperature reading at 50 % evaporated (45.3 % recovered) (see 11.6.1) are as follows:

$$T_{50E}(°C) = 93.9 + [(108.9 - 93.9)\,(45.3 - 40)/(50 - 40)] = 101.9°C \quad \text{(X1.7)}$$

$$T_{50E}(°F) = 201 + [(228 - 201)\,(45.3 - 40)/(50 - 40)] = 215.3°F \quad \text{(X1.8)}$$

X1.2.3 Temperature reading at 90 % evaporated (85.3 % recovered) (see 11.6.1) are as follows:

$$T_{90E}(°C) = 181.6 + [(201.6 - 181.6)\,(85.3 - 85)/(90 - 85)] = 182.8°C \quad \text{(X1.9)}$$

$$T_{90E}(°F) = 358.9 + [(394.8 - 358.9) \quad \text{(X1.10)}$$
$$(85.3 - 85)/(90 - 85)] = 361.0°F$$

X1.2.4 Temperature reading at 90 % evaporated (85.3 % recovered) not corrected to 101.3 kPa pressure (see 11.6.1) are as follows:

$$T_{90E}(°C) = 180.5 + [(200.4 - 180.5) \quad \text{(X1.11)}$$
$$(85.3 - 85)/(90 - 85)] = 181.7°C$$
$$T_{90E}(°F) = 357 + [(392 - 357) \quad \text{(X1.12)}$$
$$(85.3 - 85)/(90 - 85)] = 359.1°F$$

NOTE X1.1—Results calculated from °C data may not correspond exactly to results calculated from °F data because of errors in rounding.

Sample ID:
Date analyzed:
Equipment No:
Remarks:

Barometric pressure: 98.6 kPa
Analyst:

	Barometric pressure observed 98.6 kPa 740 mm Hg		corrected 101.3 kPa 760 mm Hg		procedure arithmetical/graphical		
% recovered	°C	°F	°C	°F	% evaporated	T_{evap} °C	°F
IBP	25.5	78	26.2	79.2	5	26.7	80.0
5	33.0	91	33.7	92.7	10	34.1	93.4
10	39.5	103	40.3	104.5	15	40.7	105.2
15	46.0	115	46.8	116.2	20	47.3	117.1
20	54.5	130	55.3	131.5	30	65.7	150.2
30	74.0	165	74.8	166.7	40	84.9	184.9
40	93.0	199	93.9	201.0	50	101.9	215.3
50	108.0	226	108.9	228.0	60	116.9	242.4
60	123.0	253	124.0	255.1	70	134.1	273.3
70	142.0	288	143.0	289.4	80	156.0	312.8
80	166.5	332	167.6	333.6	85	168.4	335.1
85	180.5	357	181.6	358.9	90	182.8	361.0
90	200.4	393	201.6	394.8	95	202.4	396.3
EP	215.0	419	216.2	421.1			
recovered, %	94.2		95.3				
residue, %	1.1		1.1				
loss, %	4.7		3.6				

FIG. X1.1 Example of Test Report

X2. EXAMPLES OF CALCULATION OF REPEATABILITY AND REPRODUCIBILITY OF VOLUME % (RECOVERED OR EVAPORATED) AT A PRESCRIBED TEMPERATURE READING

X2.1 Some specifications require the reporting of the volume % evaporated or recovered at a prescribed temperature. Table X2.1 shows the distillation data of a Group 1 sample as obtained by an automated unit.

X2.2 *Example Calculation:*

X2.2.1 For a Group 1 sample exhibiting distillation characteristics as per Table X2.1, as determined by an automated unit, the reproducibility of the volume evaporated,[R]volume %, at 93.3°C (200°F) is determined as follows:

X2.2.1.1 Determine first the slope at the desired temperature:

$$S_C\,\% = 0.1\,(T_{(20)} - T_{(10)}) \quad \text{(X2.1)}$$
$$= 0.1\,(94 - 83)$$
$$= 1.1$$
$$S_F\,\% = 0.1\,(T_{(20)} - T_{(10)})$$
$$= 0.1\,(201 - 182)$$
$$= 1.9$$

X2.2.2 From Table 9, determine the value of R, the reproducibility at the observed percentage distilled. In this case, the observed percentage distilled is 18 % and

$$R = 3.3 + 2.0\,(S_C) \quad \text{(X2.2)}$$
$$= 3.3 + 2.0 \times 1.1$$
$$= 5.5$$
$$R = 6.0 + 2.0\,(S_F)$$
$$= 6.0 + 2.0 \times 1.9$$
$$= 9.8$$

X2.2.3 From the calculated value of R, determine the value of volume, as described in A4.8.4.

$$R \text{ volume } \% = R/(S_C) \quad \text{(X2.3)}$$
$$= 5.5/1.1$$
$$= 5.0$$
$$R \text{ volume } \% = R/(S_F)$$
$$= 9.8/1.9$$
$$= 5.1$$

TABLE X2.1 Distillation Data from a Group 1 Sample Automated Distillation

Distillation Point Recovered, mL	Temperature° C	Temperature °F	Volume (mL) Recovered at 93.3°C (200°F)
			18.0
10	84	183	
20	94	202	
30	103	217	
40	112	233	
Distillation Point Evaporated, mL	**Temperature° C**	**Temperature° F**	**Volume (mL0 Evaporated at 93.3°C (200°F)**
			18.4
10	83	182	
20	94	201	
30	103	217	
40	111	232	

X3. TABLES OF CORRECTED LOSS FROM MEASURED LOSS AND BAROMETRIC PRESSURE

X3.1 The table presented as Fig. X3.1 can be used to determine the corrected loss from the measured loss and the barometric pressure in kPa.

X3.2 The table presented as Fig. X3.2 can be used to determine the corrected loss from the measured loss and the barometric pressure in mm Hg.

Barometric Pressure, kPa

	from	78.1	80.9	84.5	87.3	89.6	91.5	93.1	94.1	95.5	96.4	97.2	97.9	98.4	98.9	99.5	100.0	100.4	100.8	101.2	101.5	102.0	102.4	102.8	103.2
	through	80.8	84.4	87.2	89.5	91.4	93.0	94.0	95.4	96.3	97.1	97.8	98.3	98.8	99.4	99.9	100.3	100.7	101.1	101.4	101.9	102.3	102.7	103.1	103.5
Observed Loss		/-- Corrected Loss ------>																							
Units																									
	0	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.23	0.20	0.18	0.16	0.14	0.13	0.11	0.09	0.08	0.04	0.02	−0.00	−0.02	−0.06	−0.09	−0.13	−0.17
	1	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.78	0.80	0.82	0.84	0.86	0.87	0.89	0.92	0.94	0.96	0.98	1.00	1.03	1.06	1.09	1.13	1.17
	2	0.89	0.95	1.01	1.08	1.14	1.20	1.26	1.33	1.40	1.46	1.52	1.57	1.62	1.68	1.75	1.81	1.87	1.94	2.00	2.08	2.17	2.27	2.38	2.51
	3	1.15	1.25	1.36	1.46	1.57	1.67	1.77	1.88	1.99	2.09	2.19	2.28	2.37	2.47	2.58	2.69	2.79	2.90	3.00	3.13	3.29	3.46	3.63	3.84
	4	1.41	1.55	1.70	1.84	1.99	2.14	2.28	2.43	2.59	2.73	2.87	3.00	3.12	3.26	3.41	3.56	3.70	3.85	4.00	4.18	4.40	4.63	4.89	5.18
	5	1.68	1.86	2.04	2.23	2.42	2.61	2.79	2.98	3.19	3.37	3.55	3.71	3.87	4.05	4.25	4.44	4.62	4.81	5.00	5.23	5.51	5.81	6.14	6.52
	6	1.94	2.15	2.39	2.61	2.84	3.06	3.30	3.53	3.78	4.01	4.23	4.42	4.62	4.84	5.08	5.31	5.53	5.77	6.00	6.28	6.63	6.99	7.40	7.86
	7	2.20	2.46	2.73	3.00	3.27	3.55	3.80	4.08	4.36	4.65	4.90	5.14	5.37	5.63	5.91	6.18	6.44	6.73	7.00	7.33	7.74	8.17	8.65	9.20
	8	2.46	2.76	3.07	3.38	3.70	4.02	4.31	4.63	4.96	5.28	5.58	5.85	6.12	6.41	6.74	7.06	7.36	7.69	8.00	8.38	8.86	9.35	9.90	10.53
	9	2.72	3.07	3.41	3.76	4.12	4.49	4.82	5.18	5.57	5.92	6.26	6.56	6.87	7.20	7.57	7.93	8.27	8.65	9.00	9.43	9.97	10.53	11.16	11.87
	10	2.99	3.37	3.76	4.15	4.55	4.96	5.33	5.73	6.17	6.56	6.94	7.28	7.62	7.99	8.41	8.81	9.19	9.60	10.00	10.48	11.08	11.71	12.41	13.21
	11	3.24	3.67	4.10	4.53	4.97	5.43	5.84	6.28	6.77	7.20	7.61	7.99	8.37	8.78	9.24	9.68	10.10	10.56	11.00	11.53	12.20	12.89	13.67	14.55
	12	3.50	3.97	4.44	4.92	5.40	5.90	6.35	6.83	7.36	7.84	8.29	8.71	9.12	9.57	10.07	10.56	11.02	11.52	12.00	12.59	13.31	14.07	14.92	15.89
	13	3.76	4.27	4.78	5.30	5.83	6.36	6.86	7.39	7.96	8.47	8.97	9.42	9.86	10.36	10.90	11.43	11.93	12.48	13.00	13.64	14.43	15.25	16.17	17.22
	14	4.03	4.58	5.13	5.69	6.25	6.83	7.36	7.94	8.56	9.11	9.64	10.13	10.61	11.15	11.74	12.31	12.85	13.44	14.00	14.69	15.54	16.43	17.43	18.56
	15	4.29	4.88	5.47	6.07	6.66	7.30	7.87	8.49	9.15	9.75	10.32	10.85	11.36	11.93	12.57	13.18	13.78	14.40	15.00	15.74	16.66	17.61	18.68	19.90
	16	4.55	5.18	5.81	6.45	7.10	7.77	8.38	9.04	9.75	10.39	11.00	11.58	12.11	12.72	13.40	14.06	14.68	15.36	16.00	16.79	17.77	18.79	19.94	21.24
	17	4.81	5.48	6.16	6.84	7.53	8.24	8.89	9.59	10.35	11.03	11.68	12.27	12.86	13.51	14.23	14.93	15.59	16.31	17.00	17.84	18.88	19.97	21.19	22.58
	18	5.07	5.78	6.50	7.22	7.96	8.71	9.40	10.14	10.94	11.66	12.35	12.99	13.61	14.30	15.07	15.80	16.50	17.27	18.00	18.89	20.00	21.15	22.44	23.91
	19	5.33	6.08	6.84	7.61	8.38	9.18	9.91	10.69	11.54	12.30	13.03	13.70	14.36	15.09	15.90	16.68	17.42	18.23	19.00	19.94	21.11	22.33	23.70	25.25
	20	5.59	6.39	7.18	7.99	8.81	9.65	10.41	11.24	12.14	12.94	13.71	14.41	15.11	15.86	16.73	17.55	18.33	19.19	20.00	20.99	22.23	23.51	24.95	26.59
Tenths																									
	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.1	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.10	0.11	0.11	0.12	0.13	0.13
	0.2	0.05	0.06	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.13	0.14	0.14	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.27
	0.3	0.08	0.09	0.10	0.12	0.13	0.14	0.15	0.17	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.29	0.30	0.32	0.33	0.35	0.38	0.40
	0.4	0.10	0.12	0.14	0.15	0.17	0.19	0.20	0.22	0.24	0.26	0.27	0.29	0.30	0.32	0.33	0.35	0.37	0.38	0.40	0.42	0.45	0.47	0.50	0.54
	0.5	0.13	0.15	0.17	0.19	0.21	0.23	0.25	0.28	0.30	0.32	0.34	0.36	0.37	0.39	0.42	0.44	0.46	0.48	0.50	0.53	0.56	0.59	0.63	0.67
	0.6	0.16	0.18	0.21	0.23	0.26	0.28	0.31	0.33	0.36	0.38	0.41	0.43	0.45	0.47	0.50	0.52	0.55	0.58	0.60	0.63	0.67	0.71	0.75	0.80
	0.7	0.18	0.21	0.24	0.27	0.30	0.33	0.36	0.39	0.42	0.45	0.47	0.50	0.52	0.55	0.58	0.61	0.64	0.67	0.70	0.74	0.78	0.83	0.88	0.94
	0.8	0.21	0.24	0.27	0.31	0.34	0.38	0.41	0.44	0.48	0.51	0.54	0.57	0.60	0.63	0.67	0.70	0.73	0.77	0.80	0.84	0.89	0.94	1.00	1.07
	0.9	0.24	0.27	0.31	0.35	0.38	0.42	0.46	0.50	0.54	0.57	0.61	0.64	0.67	0.71	0.75	0.79	0.82	0.86	0.90	0.95	1.00	1.06	1.13	1.20

FIG. X3.1 Corrected Loss from Observed Loss and Barometric Pressure kPa

Barometric Pressure, mm Hg.

	from	571	597	634	655	672	686	698	706	716	723	729	734	738	742	746	750	753	756	759	762	765	768	771	774
	through	606	633	654	671	685	697	705	715	722	728	733	737	741	745	749	752	755	758	761	764	767	770	773	776
Observed Loss		/-- Corrected Loss ------>																							
Units																									
	0	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.23	0.20	0.18	0.16	0.14	0.13	0.11	0.09	0.07	0.05	0.02	−0.00	−0.03	−0.06	−0.09	−0.13	−0.17
	1	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.77	0.80	0.82	0.84	0.86	0.87	0.89	0.91	0.93	0.95	0.98	1.00	1.03	1.06	1.09	1.13	1.17
	2	0.89	0.95	1.01	1.07	1.14	1.20	1.26	1.32	1.39	1.45	1.51	1.57	1.62	1.68	1.74	1.80	1.86	1.93	2.00	2.08	2.17	2.27	2.38	2.50
	3	1.15	1.25	1.36	1.46	1.56	1.67	1.77	1.87	1.99	2.09	2.19	2.28	2.36	2.46	2.57	2.67	2.77	2.88	3.00	3.13	3.28	3.44	3.63	3.83
	4	1.41	1.55	1.70	1.84	1.99	2.14	2.27	2.42	2.58	2.72	2.86	2.99	3.11	3.25	3.40	3.54	3.68	3.83	4.00	4.19	4.39	4.62	4.88	5.17
	5	1.67	1.86	2.04	2.22	2.41	2.61	2.78	2.97	3.18	3.36	3.54	3.70	3.86	4.03	4.23	4.41	4.59	4.79	5.00	5.24	5.50	5.80	6.13	6.50
	6	1.93	2.16	2.38	2.61	2.84	3.07	3.29	3.52	3.77	3.99	4.21	4.41	4.60	4.82	5.05	5.28	5.50	5.74	6.00	6.29	6.61	6.97	7.38	7.84
	7	2.19	2.46	2.72	2.99	3.26	3.54	3.79	4.07	4.36	4.63	4.88	5.12	5.35	5.60	5.88	6.15	6.41	6.69	7.00	7.34	7.72	8.15	8.63	9.17
	8	2.46	2.75	3.07	3.37	3.69	4.01	4.30	4.62	4.95	5.27	5.56	5.83	6.09	6.38	6.71	7.02	7.32	7.64	8.00	8.40	8.84	9.33	9.88	10.50
	9	2.72	3.06	3.41	3.76	4.11	4.48	4.81	5.17	5.55	5.90	6.23	6.54	6.84	7.17	7.54	7.89	8.23	8.60	9.00	9.45	9.95	10.50	11.13	11.84
	10	2.98	3.36	3.75	4.14	4.54	4.94	5.31	5.71	6.15	6.54	6.91	7.25	7.58	7.95	8.37	8.76	9.14	9.55	10.00	10.50	11.06	11.68	12.38	13.17
	11	3.24	3.66	4.09	4.52	4.96	5.41	5.82	6.26	6.74	7.17	7.58	7.96	8.33	8.74	9.19	9.63	10.05	10.50	11.00	11.56	12.17	12.86	13.63	14.51
	12	3.50	3.96	4.43	4.91	5.39	5.86	6.33	6.81	7.34	7.81	8.26	8.67	9.07	9.52	10.02	10.50	10.96	11.46	12.00	12.61	13.26	14.03	14.88	15.84
	13	3.76	4.27	4.78	5.29	5.81	6.35	6.83	7.36	7.93	8.44	8.93	9.38	9.82	10.31	10.85	11.37	11.87	12.41	13.00	13.66	14.39	15.21	16.13	17.17
	14	4.02	4.57	5.12	5.67	6.24	6.82	7.34	7.91	8.53	9.06	9.61	10.09	10.57	11.09	11.68	12.24	12.78	13.36	14.00	14.71	15.51	16.39	17.38	18.51
	15	4.28	4.87	5.46	6.06	6.66	7.28	7.85	8.46	9.12	9.71	10.28	10.80	11.31	11.86	12.51	13.11	13.66	14.31	15.00	15.77	16.62	17.57	18.63	19.84
	16	4.54	5.17	5.80	6.44	7.09	7.75	8.35	9.01	9.72	10.35	10.95	11.51	12.06	12.65	13.33	13.98	14.59	15.27	16.00	16.82	17.73	18.74	19.88	21.18
	17	4.80	5.47	6.14	6.82	7.51	8.22	8.86	9.56	10.31	10.98	11.63	12.22	12.80	13.45	14.16	14.85	15.50	16.22	17.00	17.87	18.84	19.92	21.13	22.51
	18	5.06	5.77	6.49	7.21	7.94	8.69	9.37	10.11	10.91	11.62	12.30	12.93	13.55	14.23	14.99	15.72	16.41	17.17	18.00	18.93	19.95	21.10	22.38	23.84
	19	5.32	6.07	6.83	7.59	8.36	9.15	9.88	10.66	11.50	12.25	12.98	13.64	14.29	15.02	15.82	16.59	17.32	18.12	19.01	19.98	21.06	22.27	23.64	25.18
	20	5.58	6.37	7.17	7.97	8.79	9.62	10.38	11.20	12.09	12.89	13.65	14.35	15.04	15.80	16.64	17.46	18.23	19.06	20.01	21.03	22.17	23.45	24.89	26.51
Tenths																									
	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.1	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.13	0.13
	0.2	0.05	0.06	0.07	0.08	0.08	0.09	0.10	0.11	0.12	0.13	0.13	0.14	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.27
	0.3	0.08	0.09	0.10	0.11	0.13	0.14	0.15	0.16	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.29	0.30	0.32	0.33	0.35	0.38	0.40
	0.4	0.10	0.12	0.14	0.15	0.17	0.19	0.20	0.22	0.24	0.25	0.27	0.28	0.30	0.31	0.33	0.35	0.36	0.38	0.40	0.42	0.44	0.47	0.50	0.53
	0.5	0.13	0.15	0.17	0.19	0.21	0.23	0.25	0.27	0.30	0.32	0.34	0.36	0.37	0.39	0.41	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.67
	0.6	0.16	0.18	0.21	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.40	0.43	0.45	0.47	0.50	0.52	0.55	0.57	0.60	0.63	0.67	0.71	0.75	0.80
	0.7	0.18	0.21	0.24	0.27	0.30	0.33	0.35	0.38	0.42	0.44	0.47	0.50	0.52	0.55	0.58	0.61	0.64	0.67	0.70	0.74	0.78	0.82	0.88	0.93
	0.8	0.21	0.24	0.27	0.31	0.34	0.37	0.41	0.44	0.48	0.51	0.54	0.57	0.60	0.63	0.66	0.70	0.73	0.76	0.80	0.84	0.89	0.94	1.00	1.07
	0.9	0.23	0.27	0.31	0.34	0.38	0.42	0.46	0.49	0.54	0.57	0.61	0.64	0.67	0.71	0.75	0.78	0.82	0.86	0.90	0.95	1.00	1.06	1.13	1.20

FIG. X3.2 Corrected Loss from Observed Loss and Barometric Pressure mm Hg

SUMMARY OF CHANGES

Subcommittee D02.08 has identified the location of selected changes to this standard since the last issue (D 86–05) that may impact the use of this standard. (Approved Jan. 15, 2007.)

(*1*) Deleted "natural gasolines" from 1.1.
(*2*) Deleted "Group 0" from the entire standard.
(*3*) Added Fig. 6.

Subcommittee D02.08 has identified the location of selected changes to this standard since the last issue, (D 86–04b), that may impact the use of this standard. (Approved July 1, 2005.)

(*1*) Replaced Table 4 with new values.
(*2*) Revised 9.1.2-9.1.2.2, 9.1.5, and Notes 9-11.
(*3*) Added 13.5.3 and footnote reference to the research report.
(*4*) Added Appendix X5, and cross-reference in Section 12.1.

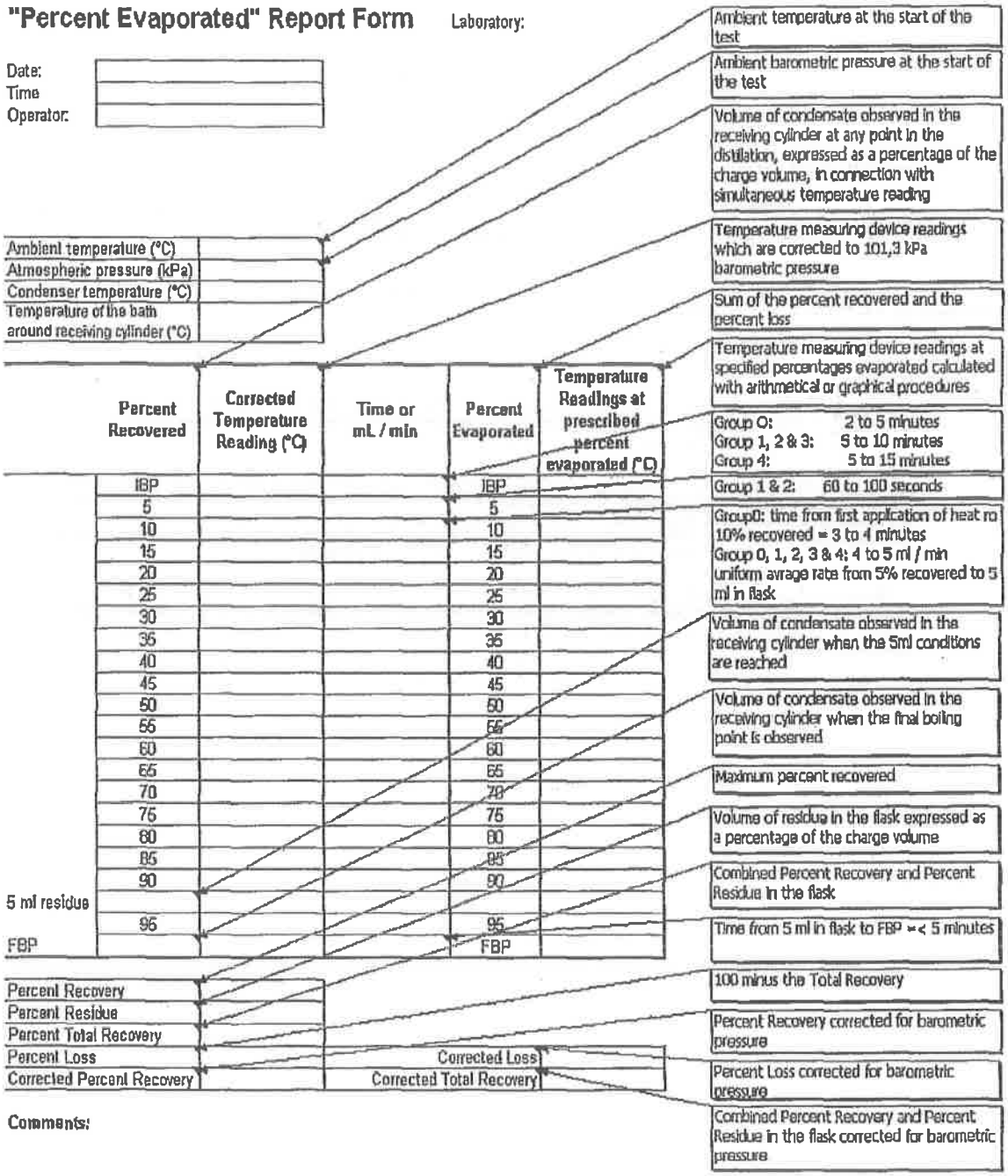


FIG. X5.2 Percent Evaporated Report Form

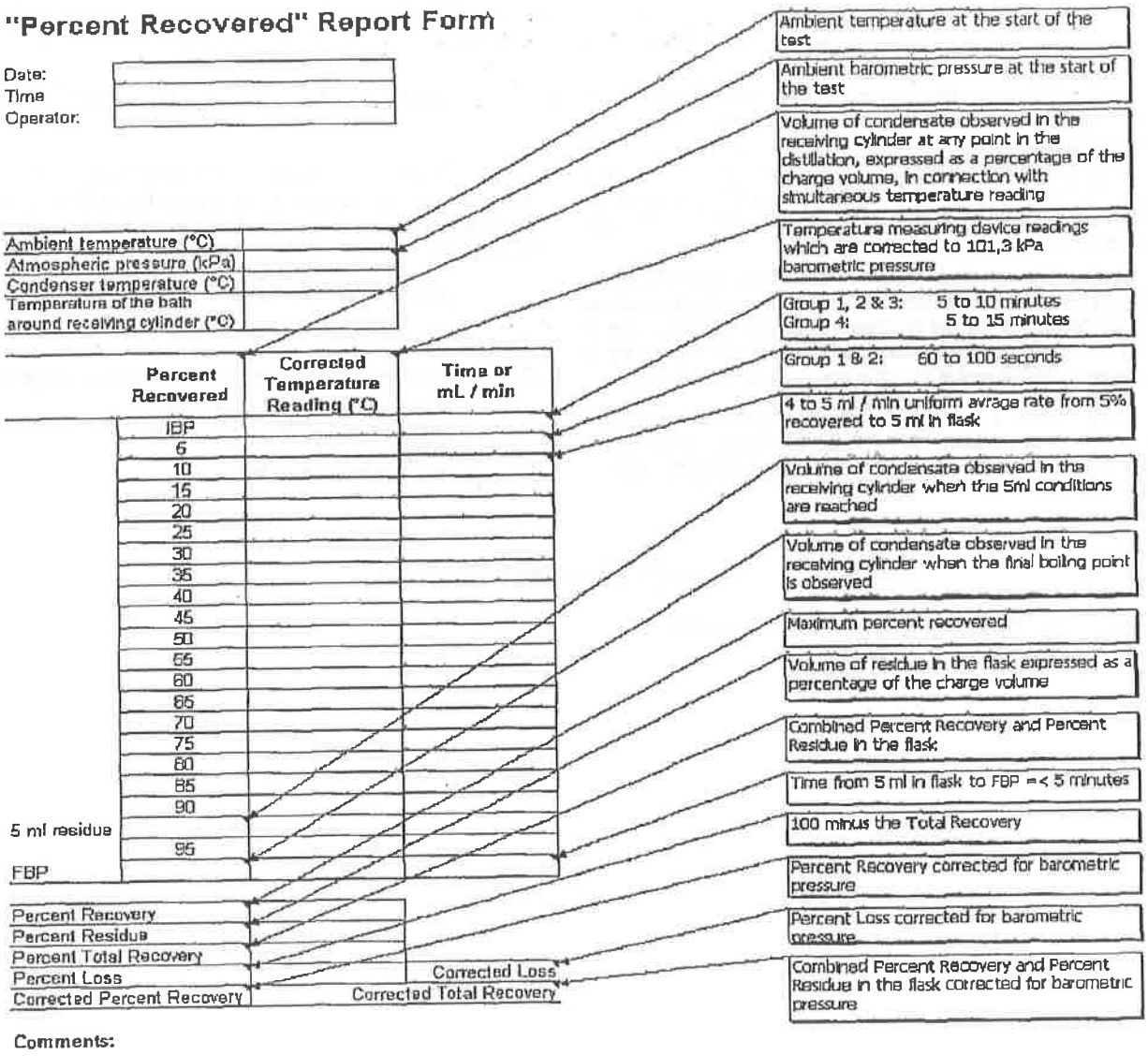


FIG. X5.1 Percent Recovered Report Form

X4. PROCEDURE TO EMULATE THE EMERGENT STEM ERROR OF A MERCURY-IN-GLASS THERMOMETER

X4.1 When an electronic or other sensor without an emergent stem error is used, the output of this sensor or the associated data system should emulate the output of a mercury-in-glass thermometer. Based on information supplied by four manufacturers of automated Test Method D 86 equipment, the averaged equations shown in X4.2 and X4.3 have been reported to be in use.

X4.1.1 The equations shown in X4.2 have limited applicability and are shown for information purposes only. In addition to the correction for the emergent stem, the electronic sensor and associated data system will also have to emulate the lag in response time observed for mercury-in-glass thermometers.

X4.2 When a low range thermometer would have been used, no stem correction is to be applied below 20°C. Above this temperature, the correction is calculated using the following formula:

$$ASTM\ 7C\ T_{etr} = T_t - 0.000162 \times (T_t - 20°C)^2 \quad (X4.1)$$

X4.3 When a high range thermometer would have been used, no stem correction is to be applied below 35°C. Above this temperature the correction is calculated using the following formula:

$$ASTM\ 8C\ T_{ehr} = T_t - 0.000131 \times (T_t - 35°C)^2 \quad (X4.2)$$

where:

T_{etr} = emulated temperature in °C for low range thermometers,

T_{ehr} = emulated temperature in °C for high range thermometers, and

T_t = true temperature in °C.

X5. EXPLANATORY REPORT FORMS

X5.1 Fig. X5.1 and Fig. X5.2 show report forms.

EXHIBIT 17

From: Hemant Talwalkar
Sent: Fri 8/27/2010 9:28 AM (GMT -7)
To: carl@media.org
Cc:
Bcc:
Subject: Pricing Matrix

Carl,

Here is the Pricing Matrix for 5 Kchar per page.

Process	Accuracy	Price/Kchar	
		5000 pages	>= 20000 pages
Double Key Compare	99.51%	$0.61	$0.48
Triple Key Compare	99.97%	$0.85	$0.69

Please let us know your process preference and how we can move forward.

Looking forward to your approval and working with you.

Have a nice day and week end!

Regards,

Hemant

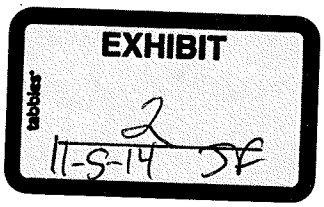
Hemant Talwalkar

Director, Business Development

HTC Global Services, Inc.

3270 West Big Beaver Road

Troy, MI 48084



Phone: (248) 530-2595

(248) 470-2939 (Cell)

Fax: (248) 786-2515

EXHIBIT 18

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR
TESTING AND MATERIALS,
d/b/a ASTM INTERNATIONAL;
NATIONAL FIRE PROTECTION
ASSOCIATION, INC.; and
AMERICAN SOCIETY OF
HEATING, REFRIGERATION AND
AIR CONDITIONING ENGINEERS,

Plaintiffs and
Counter-Defendants,

v. Civil Action No.
1:13-cv-01215-TSC

PUBLIC.RESOURCE.ORG, INC.,

Defendant and
Counter-Plaintiff. PAGES 1 - 264

_____/

Videotaped Deposition of: JAMES FRUCHTERMAN

DATE: Friday, July 31, 2015

TIME: 9:34 a.m.

LOCATION: Morgan, Lewis & Brockius, LLP
Two Palo Alto Square, Suite 700
Palo Alto, California

REPORTED BY: Kelli Combs
Certified Shorthand Reporter
License 7705.

CONFIDENTIAL - PURSUANT TO PROTECTIVE ORDER

a writing?

MR. KAPLAN: Objection; vague, incomplete hypothetical.

THE WITNESS: There are -- there is content where the OCR does not do a great job. That's very unusual but it happens.

BY MS. RUBEL:

Q Does it happen in the context of technical writings frequently?

MR. KAPLAN: Objection; vague, incomplete hypothetical.

THE WITNESS: It can. You might have a very detailed graphic that has text that overlays a picture. It's hard for the OCR to separate.

BY MS. RUBEL:

Q Are the Plaintiffs' standards technical documents?

MR. KAPLAN: Objection; vague.

THE WITNESS: Generally, yes.

BY MS. RUBEL:

Q Would you anticipate that there might be problems with the OCR of Plaintiffs' standards?

MR. KAPLAN: Objection; vague, incomplete hypothetical.

THE WITNESS: OCR usually makes errors in

scanning documents generally, so I'm sure that a raw OCR scan of those documents would also have errors.

BY MS. RUBEL:

Q And, in particular, because they're technical documents, do you think the likelihood of errors is greater?

MR. KAPLAN: Objection; incomplete hypothetical, vague.

THE WITNESS: Yes, because of diagrams; diagrams and tables are more difficult than paragraphs or text.

BY MS. RUBEL:

Q And, in particular, with diagrams and tables, would you anticipate that some of the character recognition might actually create content that's incomprehensible?

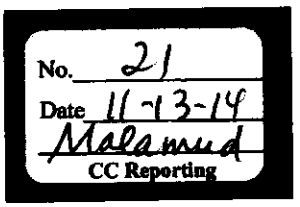
MR. KAPLAN: Objection; vague, incomplete hypothetical.

THE WITNESS: Yes. I could imagine a table that was constructed visually in such a way to make the OCR not be successful on it.

BY MS. RUBEL:

Q You indicated in your report that there was an additional way, other than the process that you used, to extract the text from the PDFs, that

EXHIBIT 19



From: Carl Malamud
Sent: Sat 1/04/2014 12:01 PM (GMT -8)
To: Rebecca Malamud
Cc:
Bcc:
Subject: Re: SVG and MathML (India and NFPA / Q4)

ok. this works for me. You're not spending a lot on contractors. I just needed to know that. (If you were spending $3k a month on contractors, that obviously would have been an easy place for me to save money. At $1k/month, it's noise.)

Keep uploading to the dropbox. But, do let me know what's coming so that I don't dive in and process things and then see more showing up the next day.

The app is sort of interesting, but doesn't help me in my core work, which is showing that we make the standards better. I'm happy to look at it, I'll tweet it, but it isn't something I'd use.

All the docs you see are, in theory, double-keyed. Of course, they may cheat and do OCR first and then do their QA. In any case, I won't be paying for double-key work for the foreseeable future.

What I *am* getting, at least from India, is full and accurate text inside of the PDF files. So, setting that text into HTML is a possible path.

But, for now, let's take January and February and get as much svg/math done as possible.

Let's also make sure we've done any NFPA docs that are in HTML but not in SVG. Also, we can do any ASTM or ASHRAE docs as well as those are helpful to me in my suit. And, India is useful.

Definitely keep plowing away on that stuff ... that's the kind of output that makes it much easier for me to try and raise money to keep you going for the rest of the year. (The book work is also very valuable to me, but I can't raise money for that.)

The summer thing may or may not happen ... I wouldn't count on it though. Right now, just raising my salary, my overhead, and your $60k is a challenge. I think I'll be able to do it, but I'm definitely running on fumes.

On Jan 4, 2014, at 11:48 AM, Rebecca Malamud <webchick@invisible.net> wrote:

>> I'll take the ones you just sent in and get them ready. Send me the next batch when they're ready.
>> I really wish this stuff were on a reasonable schedule. Nothing for 3 months and then a whole bunch of transactions as a flurry. Doesn't work for me.
>
> I could just upload the files to your server directly ... would that be easier for you?
>
>> You didn't answer my previous question, which was how much of the $5k a month that I'm sending you is being turned around as salary for your contractor? I'm digging really deep to find money for you post-February and I need to understand where my money is going if I'm going to keep digging for you. I'm happy with the work, but I don't understand the finances.
>
> I suppose I could break everything down, however I use my contractor(s) on other things as well. If I had to gauge a rough ballpark estimate, I would say that about $850 - $1200 is paid out monthly to outside contractors trained through my program to do the work. I don't think that is unreasonable, and I do much of the work as well plus manage the project. I have to figure out how to manage my time effectively so I can work on other things related to my business. You mentioned not having the "Codes of the World" summer program this year, and if that is a strain for you then lets not do the SVG/MathML track.
>

> I also mentioned that my MathML coder is working on an app. I was writing it up if you want to see it. It isn't ready for prime time but it promises to speed up production on that front. Of course, I notice that more and more of the equations are in the code now. I presume it is being keyed in unless that process has switched over to OCR. I found a couple of mistakes that appear to be OCR-related like the one below:
>
> <Screen Shot 2013-12-30 at 9.28.54 AM.png>
>
>> I just went through processing the previous batch. If I knew there were more, I would have waited an hour. Basically just doubled my work.
>
> I thought you were expecting more India ... sorry!
>
> Becky
>
>
>
> On Jan 4, 2014, at 11:19 AM, Carl Malamud <carl@media.org> wrote:
>
>> I just went through processing the previous batch. If I knew there were more, I would have waited an hour. Basically just doubled my work.
>>
>> I'll take the ones you just sent in and get them ready. Send me the next batch when they're ready.
>>
>> I really wish this stuff were on a reasonable schedule. Nothing for 3 months and then a whole bunch of transactions as a flurry. Doesn't work for me.
>>
>> You didn't answer my previous question, which was how much of the $5k a month that I'm sending you is being turned around as salary for your contractor? I'm digging really deep to find money for you post-February and I need to understand where my money is going if I'm going to keep digging for you. I'm happy with the work, but I don't understand the finances.
>>
>> On Jan 4, 2014, at 11:15 AM, Rebecca Malamud <webchick@invisible.net> wrote:
>>
>>> Hi -
>>>
>>> I just placed six new docs in teh Dropbox folder - I just finished proofing them. I thought we would have 11, but some of them were more complex than anticipated (is.3025.04.1983_008_01.svg ... it's the CIE1931 color gamut).
>>>
>>> I can finish the five in the queue if you like to reach the promised quota of 11 ... do you want me to do that?
>>>
>>> Becky
>>>
>>>
>>> On Jan 3, 2014, at 2:18 PM, Rebecca Malamud <webchick@invisible.net> wrote:
>>>
>>>> Yes - I should have the next delivery at 5PM today ...
>>>>
>>>>
>>>> On Jan 3, 2014, at 2:01 PM, Carl Malamud <carl@media.org> wrote:
>>>>
>>>>> Hi -
>>>>>
>>>>> Just checking that this is still happening? If so, I'll work on it this weekend.

>>>>>
>>>>> Carl
>>>>>
>>>>> On Dec 31, 2013, at 3:02 PM, Rebecca Malamud <webchick@invisible.net> wrote:
>>>>>
>>>>>> All are completed (both diagrams and MathML), with the exception of nfpa.nec.2011 - we have about 12 more diagrams to complete on that and we should have that completed by Friday. If you look at the diagrams, you will see that many are very complex. All have been proofed against the original JPG.
>>>>>>
>>>>>
>>>>>
>>>>
>>>
>>>
>>
>>
>

EXHIBIT 20

EXHIBIT 57
Ashley Soevyn, CSR No. 12019
Date 2/27/15
Witness: MALAMUD

From: Kickstarter
Sent: Tue 10/01/2013 12:23 PM (GMT -7)
To: carl@media.org
Cc:
Bcc:
Subject: Project Update #1: Public Safety Codes of the World: Stand Up For Safety! by Carl Malamud, Public.Resource.Org

Project Update #1: 106 New ASTM Standards Converted

Posted by Carl Malamud, Public.Resource.Org 

The work we're doing to rekey standards is part of a long-standing process we've put in place, starting with the California building codes and moving on to over 1,000 standards so far that span the globe. Just today, I added HTML versions of 106 standards from ASTM to our directory of standards required by U.S. federal law. These standards are particularly important because many of these are out-of-date although still required by federal law and there are no readily available version of these documents on the net or in public libraries around the country.

You can really see the difference between the original HTML and the rekeyed HTML:

- A47 is the 1968 standard for Standard Specification for Malleable Iron Castings. It is required by law in the OSHA standards for storage and handling of anhydrous ammonia. Here's the PDF version. Compare that to the HTML version.
- The U.S. Coast Guard requires by law the use of ASTM A333: Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service. Here's the PDF version. Compare that to the HTML version.

One of the hopes as we move beyond the rekey stage is that we can do more than simply recover text, but can start adding true value. For example, rekeying the mathematical formulas into MATHML, adding section ID headers so you can permalink not only the standard but a subsection of the standard, and converting the graphics to vector format.

We'll have another 100 or so ASTM standards done in a couple of weeks, plus there is a queue of several hundreds standards from India that have been converted into HTML and are undergoing QA.

We do get some pushback from time to time from organizations that think legally-mandated standards shouldn't be made available, but we fight hard for our right to read, know, and speak the law. Read what our lead firm, the Electronic Frontier Foundation,

has to say in their post yesterday entitled "The Law Belongs To Everyone, We Tell Standards Organizations." Some of the best intellectual property lawyers in the United States are standing firmly with us on this fundamental right to know the laws by which we govern ourselves. I hope you'll stand with us. Thank you for your support.

Care to comment? View this update on Kickstarter →

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Get the Kickstarter app for iPhone.

This is a copy of the email notification that your backers receive.

KICKSTARTER

EXHIBIT 21

EXHIBIT 62
Ashley Soevyn, CSR No. 12019
Date 2/27/15
Witness: MALAMUD

From: Carl Malamud
Sent: Tue 1/28/2014 2:09 PM (GMT -8)
To: Rebecca Malamud
Cc:
Bcc:
Subject: Re: ASTM Graphic Question ...

oh my god.

house style?

do you understand how much I'm being sued for by the ASTM? And, how absolutely, crucially important it is that you do exactly what I asked you to do, which is an exact copy?

And, do you understand that your mail to me is subject to discovery? E.g., I may have to turn these over to the court?

Either you get what we're doing with these svg and math standards or you don't. Exact copy has been the absolutely positively 100% important criteria the whole time. If there is any question whatsoever in your mind that this is the guiding principle for this work, you need to quit immediately and stop working on this project. And, if there is any question in my mind that you are not making exact copies, I have to fire you.

On Jan 28, 2014, at 2:04 PM, Rebecca Malamud <webchick@invisible.net> wrote:

> +1
>
> However - I can see that image I sent you reinterpreted in our "house style" (i.e. more modern) ... but I know our goal is to make an "exact copy" ...
>
> Hence, the one-off question.
>
> Becky
>
>
> On Jan 28, 2014, at 1:16 PM, Carl Malamud <carl@media.org> wrote:
>
>> Can you please look through the data, figure out what is going on, then send me a note with your recommendation as to the situation. I could look through the diagrams and do that assessment, but I'd rather you do it and let me know once you've gathered the facts.
>>
>> On Jan 28, 2014, at 1:11 PM, Rebecca Malamud <webchick@invisible.net> wrote:
>>
>>> I am sorting the images for MathML -vs- Diagrams ...
>>>
>>> This is the first document I found that had images like this - I am still finding plenty in the "normal" style - and I have plenty more to go through (303 total)
>>>
>>> Becky
>>>
>>>
>>>
>>> On Jan 28, 2014, at 1:08 PM, Carl Malamud <carl@media.org> wrote:
>>>
>>>> that looks like an awful lot of work.

>>>>
>>>> is there just one of those or are there a bunch that are that hard?
>>>>
>>>> On Jan 28, 2014, at 1:07 PM, Rebecca Malamud <webchick@invisible.net> wrote:
>>>>
>>>>> Do you want us to redraw illustrations that look like this?
>>>>>
>>>>> <astm.c150.1917_30_01.jpg>
>>>>
>>>
>>>
>>
>>
>
>

EXHIBIT 22

RURAL DESIGN COLLECTIVE

Codes of the World Overview & Roadmap

An Overview of the Project History

"Codes of the World" is a core focus at the Rural Design Collective, under development since 2011. The project gives participants in our program the opportunity to learn a wide variety of web, design and production skills that apply to most any STEM field of interest and are essential to creating on the Internet today. Our core group at this time ranges from 7-14 years of age and when they begin, their experience level is generally basic computer user skills. At the RDC, they get the opportunity to excel in a collaborative environment outfitted with state-of-the-art equipment, and learn that a computer is a tool to unleash their creativity in a positive way. The techniques and experiences gained in our program give them the power to use technology to innovate and express themselves on independent projects, to make and invent things, and to enhance their performance in the classroom.

Codes of the World – General Skills Covered

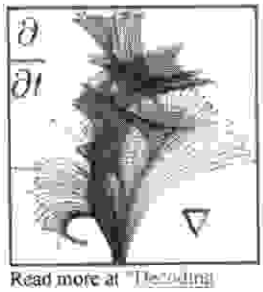
Animation – SVG animation methods include SMIL, SVG animation using the DOM as specified by the W3C, and HTML5 + CSS3. Production methods emphasize thinking of an illustration as distinct objects and movable parts so they are readily animated. The video below "The Power of Vectors" illustrates this concept and was created during the youth program

Coding – Basic coding skills include page markup with HTML + CSS with more advanced coding concepts implemented in the development of our workflow for automating SVG production

Computer Skills – Participants are required to set up their own computers in our lab and install, maintain and troubleshoot software and connectivity issues independently which is not generally offered in a shared computer environment where a system administrator oversees consistency across a network. This freedom instills confidence in participants and invites them to explore and invent.

See also Reflect and Clone Objects and Basic Lines Tutorial

Current Best Practices – Participants are introduced to concepts such as open source early in the program. They learn how to work directly in code using a text editor. They learn how to organize a project and meet realistic milestones to consistently achieve success. We emphasize superior production values and pride in craftsmanship in every endeavor as well as the importance of standards in the World and on the Web. Design is approached as a broad-ranging discipline where creative solutions to problems are encouraged. Open collaboration and communication during meetups encourages sense of teamwork and leads to serendipitous discovery.



Read more at "Decoding Unicode"

Document Production – Although not heavily emphasized in the youth track, basic elements of document production such as scanning and optical character recognition are discussed to enhance understanding of page elements and web content.

Elements of Typography – A subset of design, typography is emphasized as fundamental building blocks and an important means to clearly communicate. Understanding at this level of granularity leads to a better appreciation of the aesthetics and functionality in web design and programming.

Extra Credit – We support and encourage extracurricular activities at #rdcHQ. These projects run the gamut and give participants an opportunity to further pursue and enhance a particular skill. One such example is building a web site for the robotics team at the local middle school. This project employs many of the skills learned in our "Codes of the World" track.

Markup (HTML, MathML) – Basic Page Markup and Advanced MathML Markup are explored. At this time, only Presentation MathML Markup has been covered in-depth.

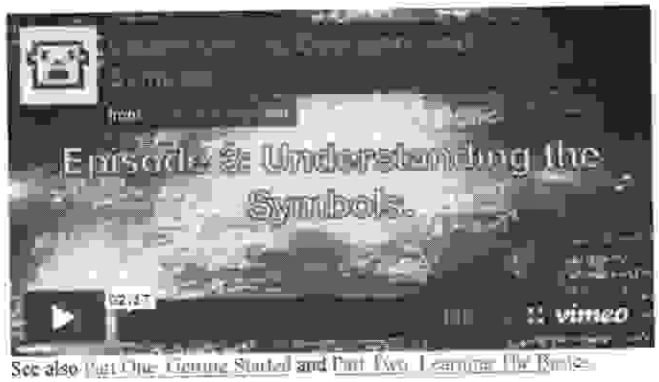
Vector Illustration – Basic, Intermediate and Advanced skills in vector illustration are explored. We emphasize open source programs so participants can download and install the software on their own computers. Inkscape is the primary tool used in our "Codes of the World" illustration track.

Understanding of Math Symbols – A fundamental understanding of all symbols used in MathML is acquired. This is primarily from a presentation standpoint, however it is useful on other levels.

Work Ethic – Closely related to production values, participants learn the importance of giving 100% to their project and seeing it through to completion.

Workflow Processes – An understanding of how all phases of the project work together is stressed. In 2011 and 2012, the focus of the program was developing and establishing the processes currently in use.

Video Production – Participants learn media skills in order to document work in progress. The above video "Understanding the Symbols" is an example of a tutorial video created during the youth program



See also Part One: Getting Started and Part Two: Learning The Basics

Roadmap (Historical) – Specific Techniques – SVG Art

2011 SVG Track

Our first season involved getting familiar with the Tools of the Trade. In the case of the creation and production of scaleable vector graphics, our tool of choice was Inkscape with a bit of crossover into Adobe Illustrator for specialized tasks. Illustration techniques involved basic diagrams and schematics, typographic controls, and working with blends and patterns. Concepts of open source art were introduced and the methodology for creating production ready art was put in place. The very simple concepts we developed are still in force today in our lab and have created a base for more advanced design and animation pursuits. See below for a list of "*Quick Start*" tutorials developed during our first year.

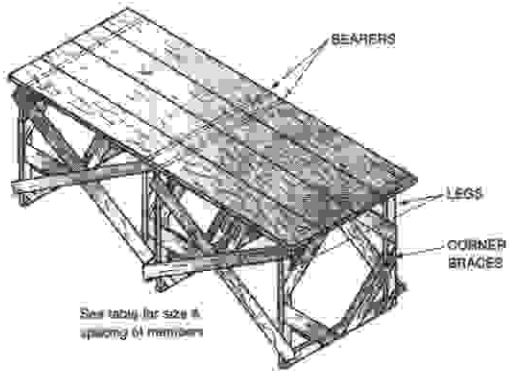
3. Patterns and Blends

4. Strokes and Compound Paths

2. Autosave, Duplicate and Move
3. Typography, ID's and Layers
4. Break Apart and Exclude
5. Crosshatch and Grids
6. Interpolate and Exclusion
3. Interpolate and Tiled Clones
4. Working with Paths Effectively
5. Clipping and Layering
6. Building Graphic Libraries

2012 SVG Track

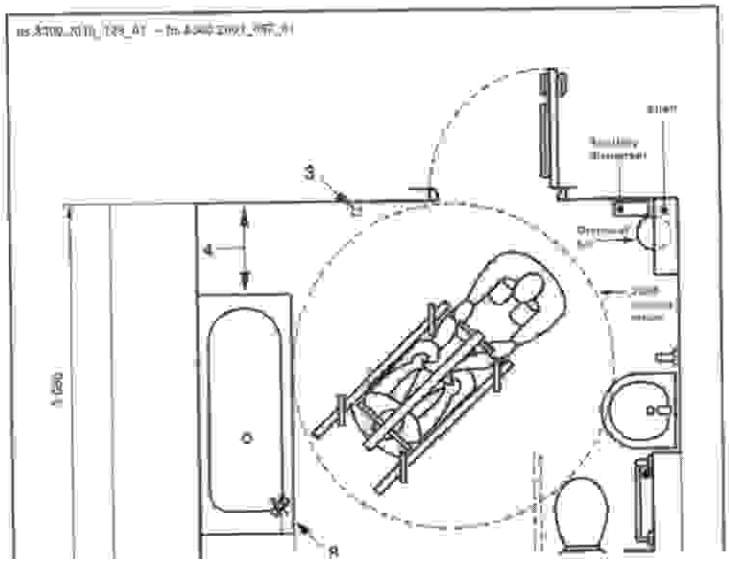
In 2012, the focus was on more of the same material as all technical artistic skills require *practice, practice, practice!* We had the opportunity to expand our illustration repertoire with intermediate and advanced schematics and maps involving crosshatching, shading with patterns, and working with perspective and on a grid. Techniques such as modifying or repurposing existing art and using auto-trace to create patterns or achieve effects where precision is less important were introduced.



ART BEFORE (L) AND AFTER (R): An excellent example of how the RDC improves the art of any standard from the 2012 program

2013 SVG Track

In 2013, we introduced "Standards Sprints" so participants could focus on an area of interest where they want to make a difference with their art. Improving safety standards was a unanimous favorite and repurposing existing art between two disability documents in the British Standard provided plenty of material to hone our vector skills. Basic SVG annotation concepts were introduced to provide an understanding of techniques (See BIG Update from #rdcHQ)



British Standard: Two Examples
An example of modifying existing art between two documents in the British Standard. The before and after versions show where mime descriptions are added for clarity or where the diagram has been modified to reflect an upgrade to the previous standard.

Pull the center green handle to the left and right to see the difference between the graphic in the two

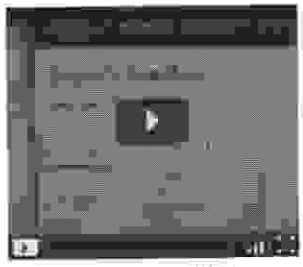
publications

Another sample from the same set of documents. 10 years have elapsed between images which means that safety improvements have been developed and added to the diagram.

Roadmap (Historical) – Specific Techniques – MathML

2011 MathML Track

As with the SVG Art Track, our inaugural year for "Codes of the World" involved researching many techniques and topics that led to our current processes. We learned how to use Amaya, the open source web editor by the W3C, and explored cross-platform presentation technologies such as MathJax for rendering in a web browser. Ultimately, we chose to create SVG representations of our coded equations to ensure accuracy when the work is translated to print. We discovered the open source SVGMath for our MathML to SVG conversion and modified it to suit our purposes.



Exercise in Accessibility – Working with MathPlayer by Design Science in 2011. Click to hear a MathML EQ!

2012 MathML Track

The 2012 season introduced document generation to enhance a greater understanding of the technologies involved in web content production. Through this knowledge, we were able to refine our method of producing MathML equations to the point where we were able to begin involving members of our youth group

2013 MathML Track

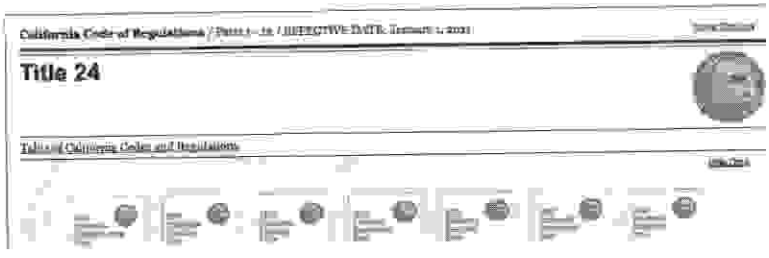
2013 reinforced the techniques established in the previous seasons. Previously obscure concepts are now easily grasped by all age levels and are documented in video tutorials

Roadmap (Historical) – Document Collections

Collections with Improved Art by The Rural Design Collective

California Building Standards Code – Title 24 of the California Code of Regulations contains the regulations that govern the construction of buildings in California..

California Code of Regulations – The remaining 27 Titles in the California Code of Regulations aside from Title 24.



US Public Safety Codes – Information and resources on safety and structural performance capabilities in construction in the U.S.

Sample document set with improved art by The Rural Design Collective

Eurocode (European Union) – The building code of the European Union. All citizens of Europe and those wishing to do business in the European Union must conform to the safety provisions of the Eurocode.

Public Safety Standards of India – Standards regulating the public safety of bicycles, buildings, condiments and spices, the testing of water, building safety, the control of pollution, and the proper functioning of fire fighting equipment

Global Accessibility Standards – Standards regulating access to buildings and public facilities for [links]

European Public Safety Standards – Standards for the safety of child perambulators and wheeled child conveyances, code of practice for the design of buildings to meet the needs of disabled people, standards for fire safety and the safety of electrical installations.

Roadmap (Present and Future) – Next Steps

Codes of the World continues to have a positive impact on our program and has led to other successful projects at Rural Design Collective Headquarters and potential future avenues of exploration. Below are a few such examples.

Cobwebs College / Cobwebs The Movie

Cobwebs is an animated series being produced by creative youth at Rural Design Collective Headquarters. They are writing the script, creating the music, drawing the art and producing the movie all on-site at #rdcHQ. As they create the series, they learn new software programs and production processes. The core techniques introduced in the "Codes of the World" SVG Illustration Track outlined above are practiced in the creation of the Cobwebs artwork.

SVG Animation / SVG Markup

As our public domain library of graphics continues to grow, our interest is beginning to focus on how to take these scalable vector graphics to the next level through animation. Our tool of choice, Inkscape, is a powerful interface to building interactivity into these currently static graphics with the ability to assign object IDs to every shape, layer and stroke. The 2014 program will begin focusing on this to provide additional knowledge for our animation track.

Library Management / Similarity Engine

Over the three year evolution of our program, we have amassed an impressive collection of production-ready graphics that are in need of a more sophisticated method of search and retrieval. As our work is intended for the public domain and is continuously published to the Internet, tools such as Google's Image Search are useful but not particularly effective. SVG Markup and Metadata will play a role in this and we have conducted preliminary research into technologies such as OpenCV.

MathML (Content Markup)

Optical character recognition does an increasingly better job at rendering most mathematical equations and will theoretically handle more complex equations at some point and even automate MathML markup. As a result, we have de-emphasized the MathML track in our core offering, however alumni of the Rural Design Collective have pursued independent projects, most notably an application that facilitates the collaborative coding of MathML equations in a web-based interface. A Content MathML track would be interesting to explore in the future and would enhance the current repository of Presentation MathML.

Click This Bumper Sticker - Make Good Things Happen!

EXHIBIT 23

View the book

Read Online

PDF	(47.6 K)
PDF	(132.2 M)
PDF	(18.2 K)
EPUB	(1.2 M)
Kindle	
Daisy	
Full Text	(3.9 M)
DjVu	(36.6 M)

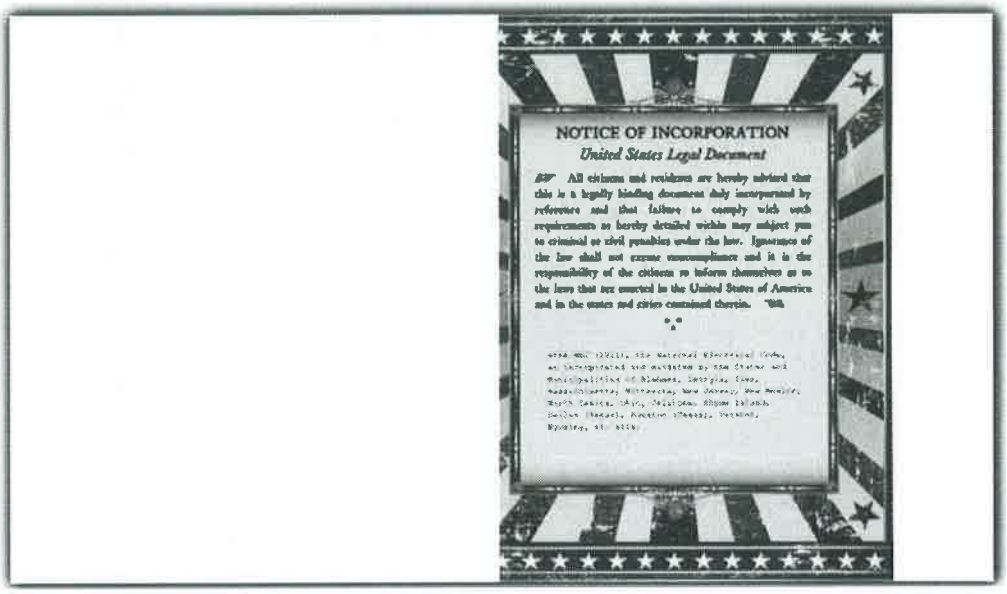
All Files: HTTPS Torrent (3/1)

Help reading texts

Resources

Bookmark

NFPA NEC (2011): National Electrical Code (January 1, 2011)



NFPA NEC (2011): National Electrical Code

fullscreen

Author: National Fire Protection Association
Subject: public.resource.org
Year: 2011
Language: English
Collection: publicsafetycode; USGovernmentDocuments; additional_collections

Description

LEGALLY BINDING DOCUMENT
United States of America

All citizens and residents are hereby advised that this is a legally binding document duly incorporated by reference and that failure to comply with such requirements as hereby detailed within may subject you to criminal or civil penalties under the law. Ignorance of the law shall not excuse noncompliance and it is the responsibility of the citizens to inform themselves as to the laws that are enacted in the United States of America and in the states and cities contained therein.

Name of Legally Binding Document: NFPA NEC (2011): National Electrical Code
Name of Standards Organization: National Fire Protection Association

Errata
Errata 70-11-2 (issued 1/24/2012) (PDF, 18 KB)
Errata 70-11-1 (issued 4/8/2011) (PDF, 48 KB)

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Reviews Write a review
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Reviewer: seokmin, choi - ★★★★★ - August 12, 2013
Subject: NEC 2011
NEC 2011

Selected metadata

Identifier:	gov.law.nfpa.nec.2011
Credits:	Uploaded by Public.Resource.Org
Licenseurl:	http://creativecommons.org/publicdomain/zero/1.0/
Mediatype:	texts
Identifier-access:	http://archive.org/details/gov.law.nfpa.nec.2011
Identifier-ark:	ark:/13960/t0bv8p02s
Ppi:	300
Ocr:	ABBYY FineReader 8.0

View the book

Read Online	(~924 pg)
PDF	(17.2 K)
PDF	(20.9 K)
PDF	(55.9 K)
PDF	(128.0 M)
PDF	(31.8 K)
PDF	(69.9 K)
PDF	(40.3 K)
EPUB	(1.4 M)
Kindle	(~924 pg)
Daisy	(~924 pg)
HTML	(66.5 K)
Full Text	(4.2 M)
DjVu	(38.7 M)

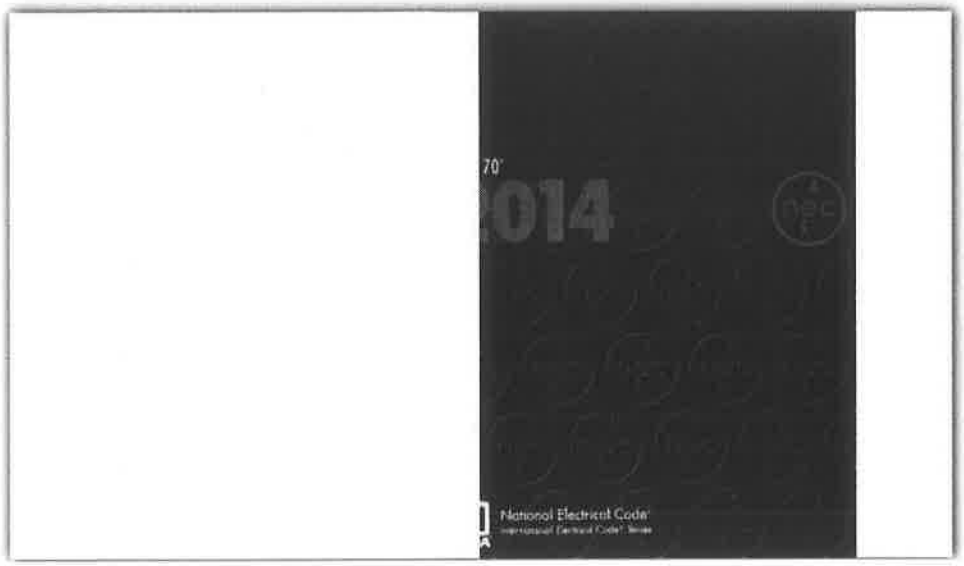
All Files: HTTPS Torrent (6/3)

Help reading texts

Resources

Bookmark

2014 National Electrical Code (2014)



2014 National Electrical Code

fullscreen

Author: National Fire Protection Association
Subject: required in all 50 states; public safety code; legally binding document
Year: 2014
Language: English
Collection: publicsafetycode; USGovernmentDocuments; additional_collections

Description

LEGALLY BINDING DOCUMENT

United States of America

All citizens and residents are hereby advised that this is a legally binding document duly incorporated by reference and that failure to comply with such requirements as hereby detailed within may subject you to criminal or civil penalties under the law. Ignorance of the law shall not excuse noncompliance and it is the responsibility of the citizens to inform themselves as to the laws that are enacted in the United States of America and in the states and cities contained therein.

Name of Legally Binding Document: NFPA NEC (2014) National Electrical Code
Name of Standards Organization: National Fire Protection Association
Standards Organization Source: NFPA National Electrical Code (Free Access Available Form Original Publisher)
Log Of Value-Added Operations: Internet Archive Task ID 292795164 (1,106 Lines of Processing, 7:04:31 Compute Time)
Name of Incorporating Jurisdiction: Commonwealth of Massachusetts (527 CMR 12.00)
Name of Incorporating Jurisdiction: City of Montgomery, Alabama (Ordinance 64-2013)

Errata
Errata 70-14-1 (issued 9/16/2013) (PDF, 56 KB)
Errata 70-14-2 (issued 12/3/2013) (PDF, 32 KB)
Errata 70-14-3 (issued 4/21/2014) (PDF, 21 KB)
Errata 70-14-4 (issued 7/29/2014) (PDF, 17 KB)

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thank you.

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Mediatype:	texts
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Scanner:	Internet Archive HTML5 Uploader 1.5.2
Identifier-access:	http://archive.org/details/nfpa.nec.2014
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Ppi:	300
Ocr:	ABBYY FineReader 9.0

EXHIBIT 24

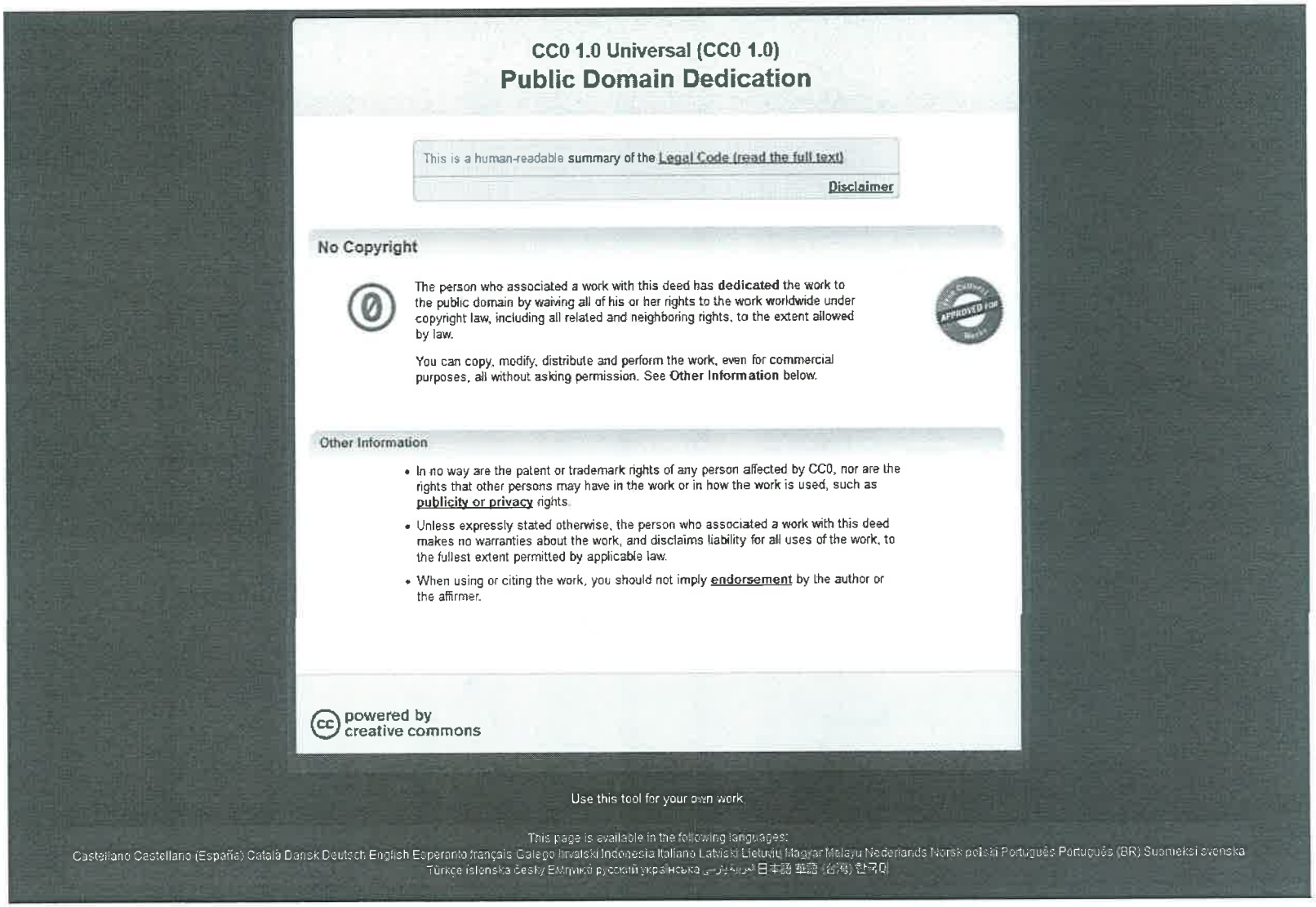

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EXHIBIT 75
Ashley Soevyn, CSR No. 12019
Date 2/27/15
Witness: MAHMUD