

Health Physics Society Publications Style Guide
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Health Physics Society Publications Style Guide

I. GENERAL GUIDELINES FOR HPS DOCUMENTS AND WEB PAGES

The following sections provide style guidance for all Health Physics Society (HPS) documents, publications, and web pages. Exceptions to these guidelines for specific HPS publications are detailed in Chapters II–V.

A. Abbreviations

- Acronyms and initialisms
 - An acronym is an abbreviation that is pronounced as a word
—e.g., NASA, NORM, ALARA
 - An initialism is an abbreviation that is pronounced letter by letter
—e.g., US DOE, PhD, CT
 - Spell out all acronyms and initialisms at their first use in the text and then give the acronym or initialism in parentheses. In most cases, once an acronym has been introduced, it should be used throughout.
 - Do not use apostrophes for plural forms
—e.g., ABCs, ECGs
 - Use apostrophes for possessives
—e.g., US EPA’s guidelines, US NRC’s report
 - Do not use an apostrophe for possessive when the abbreviation is in parentheses following the spelled-out version
—e.g., The US Environmental Protection Agency’s (US EPA) guidelines
- Use abbreviations for most units of measure only when preceded by a numeral and when part of the following type of construction
—e.g., 10 mL kg⁻¹, 2 h, 25 g
- In tables and figures, expand abbreviations only if not used in text.
- Separate initials of a person’s name with periods and no space after the period between initials
—e.g., J.R.R. Tolkien
- Do not use commas with Jr., Sr., or numerals following a person’s name unless specified by that person
—e.g., Tom Smith Jr., Jim Johnson III, Johnson J III, Smith T Jr.
- et al.: do not set off with commas; use “and others” or “and colleagues” in running text.
- State names: spell out full name of state in running text; use two-letter postal abbreviations, without periods, in addresses.
- US and UK: spell out United States and United Kingdom when used as a noun; abbreviate when used as an adjective.
- vs.: never spell out

See [Appendix A: Word List](#), which includes common abbreviations, acronyms, and initialisms used in HPS documents.

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B. Capitalization (also see [Titles](#))

- Literary titles
 - In titles and first-order headings (Introduction, Materials and Methods, etc.) capitalize the first and last word and all words with four or more letters. Also capitalize words with fewer than four letters except articles (a, an, the), short conjunctions (and, as, but, if, or, nor), and short prepositions (at, by, for, in, of, off, on, out, to, up).
 - In secondary headings, table titles, and figure legends, capitalize only the first word and proper nouns.
 - In general, do not capitalize designative terms
 - e.g., case 1, group 2, type 3, cluster A
 - Capitalize the following designative terms
 - Fig. 1, Table 1, Axis 1, Appendix A
- Personal titles
 - Capitalize official titles of honor and respect that precede personal names
 - e.g., HPS President Karl Z. Morgan, Professor Henry Higgins
 - Do not capitalize official titles when the personal name is set off by commas
 - e.g., The HPS president, Karl Z. Morgan, spoke . . .
 - Do not capitalize titles of honor and respect when they follow a name or are used in place of a personal name
 - e.g., Karl Z. Morgan, president of the HPS, spoke . . . ; Henry Higgins, emeritus professor, taught . . .
 - Retain the capitalization in the titles of *high-ranking national, state, and international officials* when they follow or replace a *specific personal name*
 - e.g., national: the President, the Speaker, the Attorney General; state: the Governor; international: the Queen of England, the Pope
 - Do not capitalize titles used as general terms of classification
 - e.g., a US senator, every king, any ambassador

See *Gregg Reference Manual*, Part 1, Section 3, for more capitalization information and examples.

C. Format

Each HPS publication/website has its own formatting guidelines, which can be found in sections II–V. The guidelines followed by all publications/web pages:

- Headings
 - Center, but do not underline, main title/heading in *Health Physics Journal*. Left justify, but do not underline, main title/heading in *Health Physics News* and on the HPS website.
 - Left justify, but do not underline, other headings.
 - In titles and first-order headings (Introduction, Materials and Methods, etc.) capitalize the first and last word and all words with four or more letters. Also capitalize words with fewer than four letters except articles (a, an, the), short conjunctions (and, as, but, if, or, nor), and short prepositions (at, by, for, in, of, off, on, out, to, up).

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- In secondary headings, table titles, and figure legends, capitalize only the first word and proper nouns.
- Bullets and lists
 - For lists within the text, use numbers in parentheses with each item followed by a comma
—e.g., Please bring (1) your notebook, (2) a pencil or pen, and (3) a graphing calculator.
 - For displayed lists, follow the introductory text with a colon (see next item).
 - For displayed lists, use bullets or numbered-list style, capitalize the first word of each item, and follow each item with a period—
When you come tomorrow, please bring:
 - Your notebook.
 - A pencil or pen.
 - A graphing calculator.When you come tomorrow, bring three items:
 1. Your notebook.
 2. A pencil or pen.
 3. A graphing calculator.

D. Internet

- HPS style for commonly used internet terms: email, home page, internet, online, web, web address, web page, webmaster, website
- URLs—to improve readability:
 - For *Health Physics News* and on the HPS website (but not for *Health Physics*): if possible, uniform resource locators (URLs) should not be used in the text of documents. Instead, use descriptive text that is linked to the URL
—e.g., More information can be found on the [US Nuclear Regulatory Commission website](#).
 - When URLs are used within the text in documents in *Health Physics News* and on the website, they should be linked and written without the http:// and www (if these are not needed when typing the address into a browser). But do keep https:// at the beginning of a web address
—e.g., [nrc.gov](#) or <https://hps.org/membersonly/operations/>

E. Nuclides and Elements

- Do not use the historic names RaA, RaB, RaC, ThA, ThB, etc. Use ^{218}Po , ^{214}Pb , ^{214}Bi , etc., instead.
- Spell out and lowercase the full name of elements in text (strontium, iodine), except when mass numbers are used (^{90}Sr , ^{131}I).
- Use the following terms carefully and correctly
 - Radioactivity: a property of a substance, like density or mass; a substance cannot contain or have radioactivity, but it can be radioactive
 - Radionuclide: a radioactive nuclide

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- Radiation: the emission from a radionuclide
 - e.g., gamma radiation, alpha-particle radiation
- Isotopes: a species of atom (with reference to an element) having a specific mass number
 - e.g., ^{234}U , ^{235}U , ^{238}U are the most abundant isotopes of uranium
- Nuclides
 - Place the superscript atomic mass number before the element abbreviation
 - e.g., ^{90}Sr (not Sr-90)
 - Spell out elements at the beginning of a sentence
 - e.g., Strontium-90 was found . . .
 - For the general public (e.g., ATE, Current News, fact sheets, position statements, all public HPS website pages) spell out radionuclides the first time, followed by the capitalized abbreviation in parentheses—e.g., strontium-90 (^{90}Sr)—and then use the abbreviation in the rest of the document.
 - For a technical audience (e.g., *Health Physics Journal*, *Health Physics News*, Members Only pages of the website) use only the abbreviation.

F. Numbers, Units, and Symbols

1. Numbers

- Spell out numbers one through nine unless they precede a unit
 - e.g., five patients, 5 Bq (refer to [Appendix A: Word List](#) for abbreviations of common units)
- Use numerals for numbers 10 or greater.
- Use numerals when one or more of the numbers in a series is 10 or greater.
- Use numerals with terms of measure, time, and ages when used as significant statistics or as technical measurements; with numbers indicating serial position (case 3, experiment 2, grade 1); and with everything possible in tables.
- Do not use “E-notation.” Use the power of 10 in text, tables, and figures
 - e.g., 2.58×10^{-4} , not 2.58E-4 or 0.000258
- Use zero before decimals
 - e.g., 0.1, not .1
- The number of significant digits must be commensurate with the precision of the method of measurement. The number with the least precision determines the number of significant digits used for related numbers
 - e.g., 25 ± 1.1 g (not 25.3 ± 1.1 g)
- Use commas in numerals with 4+ digits (4,000; 58,000), except page numbers, years, addresses, and dates.
- Use en dashes (–) for ranges in text and in tables (alt 0150).
- Do not omit digits in ranges
 - e.g., 1975–1980, not 1975–80; pages 234–239, not 234–9
- Don’t duplicate % sign when using en dashes with ranges of percentages
 - e.g., 40–50%

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- Abbreviations of units and the symbol for percentage (%) must be used only when preceded by a numeral
 - e.g., 30% or 1 Bq
- Write phone numbers with no parentheses
 - e.g., 123-456-7890
- Do not superscript when using ordinal numbers
 - e.g., 1st or 3rd, not 1st or 3rd

2. Units of measure

- It is HPS policy to use the International System of Units (SI) in all documents when expressing radiological quantities ([Position Statement PS025-0](#)), including letters to the editor—do not follow with traditional units in parentheses.
- When using information taken directly from a document that uses traditional units, follow the traditional units with SI units in parentheses and add a footnote stating that the original information was in traditional units
 - e.g., The US Environmental Protection Agency has set a radon action level of 4.0 pCi L⁻¹ (150 Bq m⁻³).¹
 - ¹Note that the radon concentration units are given here in pCi L⁻¹ (called traditional units) because that is the unit used by the US Environmental Protection Agency. However, the Health Physics Society has adopted the SI (International System) of units and these are given in parentheses.
- Detailed guidance for SI units is provided in [Chapter VI](#) of this style guide.
- Abbreviate unit when preceded by a numeral and when part of the following type of construction: 10 mL kg⁻¹.
- Use negative exponents instead of slashes
 - e.g., 1 Gy y⁻¹ (not 1 Gy/y, 1 Gy per year, 1 Gy/a)
- For information intended for the general public, write out the dose unit the first time with the abbreviation in parentheses and then use the abbreviation thereafter
 - e.g., millisieverts (mSv)

3. Symbols

- Use times symbol (×) for multiplication (alt 0215); do not use keyboard “x.”
- Trademarks—use superscript registered trademark symbol (®) or unregistered trademark symbol (™) when it is common practice for the company.
- Greek: spell out the words gamma, alpha, and beta unless used as a variable in an equation.
- Put a space before and after every mathematical operator (×, +, ±, <, >, etc.) that is between two numbers
 - e.g., 1 + 5 = 6, 2 > 1

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- Do not put a space after mathematical operators that precede a single number
—e.g., <1
- For temperature, do not put a space between the number, the degree symbol, and the unit
—e.g., 30°C

G. Punctuation

- Apostrophes
 - Use apostrophes for possessives, but not for plural forms of abbreviations or years
—e.g., 1990s, ECGs
 - Do not use an apostrophe for possessives when the abbreviation is in parentheses following the spelled-out version
—e.g., The US Environmental Protection Agency’s (US EPA) guidelines
 - Use curly apostrophes for PDFs and all documents that will be printed, including fact sheets, position statements, etc.
 - Use straight apostrophes on all HPS website pages.
- Commas
 - Use serial commas (comma before “and” and “or” in a series of three or more).
 - Use comma in numerals with 4+ digits (4,000; 58,000), except in page numbers, years, addresses, and dates.
 - Use a comma after e.g. and i.e.
 - Don’t use a comma before or after et al.
- Colons
 - Capitalize the word following a colon in section titles.
 - In the Reference list, do not capitalize the word following a colon.
 - In photo captions, use a colon after left to right with a group photo listing
—e.g., Meeting speakers, left to right: Bob, Tom, and Sue Smith
 - Use only one space after a colon.
- Dashes
 - No space before or after dashes.
 - Use en dashes (–) for ranges in text and in tables (alt 0150).
 - Use em dashes (—) in place of other punctuation for special emphasis, e.g., comma, colon, semicolon, parentheses (alt 0151).
- Ellipsis marks
 - Ellipsis marks are three spaced periods, with one space before and after each period (. . .). Alternatively, you can use the autoformat ellipse symbol (...) that does not have spaces between the periods. Whichever format you choose, be consistent within the document.
 - Use to indicate a sentence that trails off at the end
—e.g., I wanted to go to . . .
 - Use to indicate a deliberate pause
—e.g., Bring a friend . . . if you have one.

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- Use to indicate words omitted within a quoted sentence
—e.g., “Over 50 years . . . we have witnessed a change.”
- Use to indicate words omitted at end of a quoted sentence
—e.g., “Can anyone explain why . . . ?”
- Parentheses
 - Within the text of a document, parentheses are used to set off nonessential elements added by the author, which could be a single word, a phrase, an entire sentence, a number, or an abbreviation
—e.g., He worked for the US Department of Energy (US DOE).
 - When a parenthetical element is used within another parenthetical element in the text, use parentheses on the outside and brackets on the inside
—e.g., He worked for a government agency (the US Department of Energy [US DOE]).
 - Brackets are also used for a correction or insertion, not by the original author, in a quoted extract
—e.g., He said, “I aren’t [sic] going there.” or He said, “She [Tammy] won’t be there.”
 - Double parentheses (one set within another) may be used with chemical compounds.
 - In mathematical equations, use brackets on the outside: $[x + (y - z)]$.
 - For triple parentheses in mathematical equations, use enclosures in this order: $\{x + [y - (z + a)]\}$.
- Quotation marks
 - Use curly quotation marks for PDFs and all documents that will be printed, fact sheets, position statements, etc.
 - Use straight quotation marks on all HPS website pages.
- Slashes
 - No space before or after a slash
 - For text, avoid slash constructions
—e.g., use “he or she” (not “he/she”)
 - In units, use negative exponents instead of slashes
—e.g., $1 \text{ Gy } y^{-1}$ (not $1 \text{ Gy}/y$, 1 Gy per year , $1 \text{ Gy}/a$)

See *Gregg Reference Manual*, Part 1, Sections 1 and 2, for more punctuation information and examples.

H. References, Citations, Resources, Footnotes, and Press Releases

- Any material from another source that has been paraphrased or directly quoted **must** be cited and referenced.
- If material is cited in the text, make sure the source is in the reference list.
- If a source is in the reference list, make sure it is cited in the text.
- In *Health Physics News* (but not in *Health Physics Journal*) a source may be linked in the main text to an internet URL, if available, instead of being cited and placed in the reference list.
- We **do not use** Wikipedia as a source in HPS documents.

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1. References

- Acceptable publications for the reference list include journal articles, books, technical reports, cataloged theses and dissertations, proceedings, letters to the editor, websites, patents, maps, recordings, etc. Articles accepted for publication, but not yet published, may be included in the reference list as “in press.”
- Include all author names in each full reference
—i.e., not “et al.”
- Change superscripts, subscripts, italics, and special characters in names and titles to plain text
—e.g., “García” will be “Garcia”
- Spell out Greek letters
—e.g., “β-radiation” becomes “beta-radiation”
- Always use page numbers when citing an article in proceedings and similar references.
- Do not use abbreviations such as *op.cit.* and *ibid.* in the reference list.
- If an author provides a web address for a published source, cite the publication in the text and include the web address and the accessed date after the regular cited reference in the reference list. (For *Health Physics News*, a link to the source may be included in the text when a Reference list is not otherwise needed.)
- When a website that is not a published source is referenced in the text, use a footnote, with the web address and date accessed in the footnote. (For *Health Physics News*, a link to the website may be included in the text instead of as a footnote.)
- Footnote (but do not cite or list as references) unpublished materials, which include personal letters and communications, internal memoranda, private tape recordings, user’s manuals, data to be published, etc.
- Order the references alphabetically by name and then chronologically.
- If an author has more than one publication, list those with only one author first, in chronological order; list those with two authors second, alphabetically first, then in chronological order; list those with three or more authors last, in chronological order.
- If an author publishes more than one work in the same year or two authors with the same name publish in the same year, use a letter designator after the year
—i.e., 2001a, 2001b, etc.
- Use [List of Journals Indexed in Index Medicus](#) or [List of Serials Indexed for Online Users](#) for journal abbreviations. [MEDLINE’s Journal Browser](#) feature is also a helpful resource.
- For HPS documents (but not *Health Physics Journal*), sources of further information that might be of interest to the reader can be included in the Resources for More Information section.

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- Listings in Resources for More Information should follow the same style as listings in References.

Examples of reference list items can be found in [Appendix C: Reference Examples](#).

2. Citations

- When quoting or paraphrasing text or data from another source, list the author's last name and the year of publication in parentheses in the text —e.g., (Smith 1998) or (Todd and Warren 1990) or (Brown et al. 1991) and include full publication information in the references list.
- Citations to more than one source should be listed in chronological order —e.g., (Smith 1988, 1990; Jones et al. 1992).
- Citations to sources with two authors should include both authors' names.
- Citations to sources with more than two authors should include the first author's name and "et al."
—e.g., a work by Alpher, Bethe, and Gamow should be cited in text as (Alpher et al. 2015).
- Citations to sources that are organizations or agencies should use the abbreviated name
—e.g., (US EPA 2015), (NCRP 2014)

3. Resources for More Information (for HPS documents, not *Health Physics Journal*)

- Sources of further information that might be of interest to the reader can be included in the Resources for More Information section, after the References.
- Listings in Resources for More Information should follow the same style as listings in References.

4. Footnotes

- Footnote material that needs further explanation.
- Footnote (but do not cite or list as references) unpublished materials, which include personal letters and internal memoranda, private tape recordings, user's manuals, data to be published, etc.
- When a website that is not a published source is mentioned in the text, do not include the website in the reference list. Instead, footnote the website name and put the web address and date accessed in the footnote at the bottom of the page. (For *Health Physics News*, a link to the source may be included in the text when a footnote is not otherwise needed.)
- Use superscript Arabic numerals for footnotes (1, 2, 3, etc.) in the text. Use superscript Roman lowercase letters, not numbers or symbols, for footnotes in a table (a, b, c not 1, 2, 3). Use in order of appearance in table.
- Whenever possible, the footnote should be on the bottom of the same page as the footnoted item.

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5. Press Releases

Attribute press release information to the organization that put out the press release, with a link to the press release.

I. Spelling, Hyphenation, and Italics

1. Spelling

- Use *Merriam Webster's Collegiate Dictionary*, Tenth or Eleventh Edition (exceptions: byproduct, email, foodborne, online).
- Use American English versions for spelling—stomas, not stomata (obvious exceptions: data, bacteria, criteria, etc.).
- Drop the -ue endings in such words as catalog, analog, dialog (exception: use technique, not technic).
- -ogic vs. -ogical: retain -al (radiological, biological, etc.).
- Spell out percent in main text when not preceded by a number. Use % symbol in figures and tables and in main text when preceded by a number.
- Scientific names
 - The scientific name of a species is italicized and consists of the genus name and the species epithet.
 - The genus name is capitalized; the species epithet is not—e.g., *Homo sapiens*, *Drosophila melanogaster*
 - When first used in a document, spell out both the genus name and species epithet; subsequently, the genus name may be abbreviated to its initial capital letter—e.g., *Escherichia coli* (*E. coli*)

See [Appendix A: Word List](#), which provides examples of spelling of words that are regularly used in HPS documents.

2. Hyphenation

- Eliminate hyphens with most prefixes: co, multi, mid, non, over, pre, post, etc.
- Do not use hyphens for adjective forms of a priori, in situ, in vivo, in utero, and in vitro.
- Hyphenation for words frequently used in HPS publications:
 - bylaws
 - byproduct
 - cochair
 - cosponsor
 - email
 - fold: no hyphen when number is expressed in words (twofold); hyphen when number is expressed as a figure (10-fold)
 - half-life
 - handheld
 - health care (as noun and adjective)

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- linear no-threshold
- man-made
- multichannel analyzer
- online
- rulemaking
- x rays (no hyphen when used as a noun)
- x-ray machine (hyphen when used as an adjective)

See [Appendix A: Word List](#), which also provides examples of hyphenation of words that are regularly used in HPS documents.

3. Italics

- Italicize names of movies, books, journals, plays, and newspapers in text (see Titles).
- Use italics sparingly for emphasis in text.
- Italicize variables, but not R, X, M, A, B, etc., when they represent chemical elements or groups.
- Italicize statistical symbols
— R^2 , r^2 , p
- Punctuation after italicized words is the same style as the main text.
- Do not italicize common Latin words and abbreviations
—et al., i.e., e.g., etc., vs., a priori, in situ, in vivo, in utero, in vitro

J. Tables and Figures

- Submit table files as Microsoft Word files; submit figures and other artwork as tagged image file format (TIFF), encapsulated PostScript (EPS), or PowerPoint (PPT) files.
- Submit high-resolution tables and figures.
- Do not use “see” in table or figure citations in text.
- Capitalize and spell out “Table” throughout
—e.g., as shown in Table 1
- Capitalize and abbreviate “Fig.” throughout
—e.g., as shown in Fig. 1
- Place table and figure on page where they are referenced (if they don’t fit, place on top of next page).
- Call figures out in order in text; i.e., Table 3 cannot be mentioned in the text before Tables 1 and 2.
- Place table title above the table.
- Place figure title in caption under the figure.
- Place figure legends, which describe data points, in the upper right or left corner of the figure or in the caption.
- Number tables and figures in order of appearance (Arabic: 1, 2, 3).
- Capitalize only the first word in column headings in a table.
- Use normal capitalization in captions and footnotes, only first word and proper nouns.

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- Use superscript Roman lowercase letters, not numbers or symbols, for footnotes in a table (a, b, c not 1, 2, 3). Use in order of appearance in table.
- Acknowledge data from other sources with citations to references. Citations may be placed in the caption, in the main body of the table/figure, or in footnotes, as appropriate.

K. Dates

- 1 January 2015 (not January 1, 2015)
- January 2015 (no comma between month and year)
- 1990s, 2000s (no apostrophe)

L. Titles

- Personal, group, and meeting titles
 - Titles of HPS officers include president, president-elect, past president, president emeritus, secretary, secretary-elect, treasurer, and treasurer-elect.
 - President emeritus is the title given to each past president of the Society after completion of the year of service on the Board of Directors as the immediate past president.
 - Capitalize all official titles of honor and respect when they precede personal names
 - e.g., HPS President Karl Z. Morgan, Professor Henry Higgins
 - Do not capitalize official titles when the personal name is set off by commas
 - e.g., The HPS president, Karl Z. Morgan, spoke . . .
 - Do not capitalize titles of honor and respect when they follow a name or are used in place of a personal name
 - e.g., Karl Z. Morgan, president of the HPS, spoke . . . ; Henry Higgins, emeritus professor, taught . . .
 - Retain the capitalization in the titles of *high-ranking national, state, and international officials* when they follow or replace a specific personal name
 - e.g., national: the President, the Speaker, the Attorney General; state: the Governor; international: the Queen of England, the Pope
 - Do not capitalize titles used as general terms of classification
 - e.g., a United States senator, every king, any ambassador
 - In the byline, note if the author is a CHP, MD, or doctorate (PhD or some other doctoral credential) if known.
 - For names of meetings and groups, do not capitalize unless part of an official name
 - e.g., 2015 HPS Annual Meeting, but the annual meeting of the HPS; the Florida Chapter, but the chapter (section, committee, etc.)
- Literary titles
 - Capitalization: In titles of publications and documents, capitalize the first and last word and all words with four or more letters. Also capitalize words with fewer than four letters except articles (a, an, the), short conjunctions (and, as, but, if, or, nor), and short prepositions (at, by, for, in, of, off, on, out, to, up).

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- Quotation marks
 - Use quotation marks around:
 - Part of a complete published work—chapters, lessons, topics, sections, parts within a book, articles and feature columns in newspapers and magazines, essays, short poems, lectures, sermons, conference themes, presentations, events, brochures, albums.
 - Complete but unpublished works—manuscripts, dissertations, reports.
 - Titles of songs and other short musical compositions, titles of individual segments or programs that are part of a larger television or radio series.
 - Names of conferences and talks.
 - Quotation marks are not necessary for the names of well-known documents or the titles of sacred works.
 - Do not use quotation marks with Preface, Contents, Appendix, and Index, even though they represent parts within a book. They are often capitalized for special emphasis.
 - Examples:
 - Health Physics Society Position Statement 017-1, “Use of Ionizing Radiation for Security Screening Individuals”
 - ANSI Standard N13.12 (1999), “Surface and Volume Radioactivity Standards for Clearance”
- Italics
 - Italicize complete works that are published as separate items—books, pamphlets, long poems, magazines, newspapers, movies, plays, musicals, operas, individual videocassettes, television and radio series, long musical pieces, paintings, works of sculpture, and material that is being prepared for publication.
 - Examples:
 - *Federal Register*
 - NCRP Report No. 160, *Ionizing Radiation Exposure of the Population of the United States*
 - ICRP Publication 48: *The Metabolism of Plutonium and Related Elements*

M. Writing Responsibly

HPS Web Operations provides the [Health Physics Society Guide: Avoiding Plagiarism and Copyright Infringement](#) to aid HPS members in preparing documents, web pages, and presentations for publication on the HPS website and in *Health Physics News*.

Plagiarism and copyright information for authors of papers submitted to *Health Physics* and *Operational Radiation Safety* can be found on the Journal website in the [Journal Authors' Guide to Writing Responsibly](#).

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II. SPECIFIC GUIDELINES FOR *HEALTH PHYSICS NEWS* AND HPS WEBSITE

To prepare documents for formatting by Web Operations staff (includes *Health Physics News*, fact sheets, position statements, information sheets, standard operating procedures, and most other website content) the author will:

- Provide the text in a Word document.
- Use one column.
- Separate paragraphs with a double return, no indentation.
- Use only one space after periods.
- Have no need to do further formatting—Web Operations staff will finalize the formatting in the document according to the style used for that type of document.
- Include photos, graphics, tables, and figures in the Word document to show suggested placement.
- Also provide photos, graphics, and figures as separate JPEG, PNG, TIFF, GIF, or PDF files, medium to high resolution.
- Acknowledge data in text, tables, and figures from other sources with citations to references.
 - In *Health Physics News*, a source may be linked in the main text to an internet URL (if available) instead of being cited and placed in the reference list.
- Acknowledge source of graphics and photos.
- Use only copyright-free graphics and photos unless written permission is received and made available to Web Operations staff.
- Get whatever permission is necessary for use of graphics and photos—for one-time use, multiple use on one platform, multiple use on multiple platforms, etc., whatever applies.

III. SPECIFIC GUIDELINES FOR *HEALTH PHYSICS JOURNAL* AND *OPERATIONAL RADIATION SAFETY*

Style

- Write manuscripts in clear, concise English.
- If English is not the author's first language, seek assistance from a company that provides substantive editing services, such as:
 - www.themedicaleditor.com
 - www.biosciencewriters.com
 - www.bostonbioedit.com
 - www.sciencedocs.com
 - www.prof-editing.com
 - www.aje.com
 - www.enago.com

Please note that neither the Journal's publisher (Lippincott Williams & Wilkins) nor the Journal takes responsibility for, or endorses, these services. Their use does not guarantee acceptance of a manuscript for publication.

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Book reviews

- Obtain approval from the Journal's book editor to submit a review.
- Submit to the [Editorial Manager website](#); direct submission to the book editor is not accepted.
- Submit as a Microsoft Word document if possible; other current word processor formats are acceptable as well as plain text files.
- Provide a heading with the following information:
 - Book title author or editor.
 - Year of publication.
 - Number of pages.
 - Hard/soft cover.
 - Price.
 - Publisher's name and full address.
 - ISBN number.
 - Publisher's website.

Figures

- Submit figures that are at least 8.26 cm wide (one column wide) with type (letters and data) font at least 0.159 cm high.
- For larger figures, size them to be 17.1 cm wide (two columns wide) with type font at least 0.318 cm high.
- Size figures so they are at least as large as they should appear.
 - To avoid resolution loss, pictures will not be enlarged over 100%.
 - Figures will be set according to the smallest size font in the legend or on any axis.
 - If small font is used, figure will be enlarged to make the font readable.
 - Final figure size and placement is determined by the editorial staff and the publisher.
- Submit potential cover photos in color if possible; ensure that photos pertain to an accepted manuscript, although they need not be a figure cited in the manuscript.
- Label parts of figures with lowercase letters.
- Refer to parts of a figure in the text using the figure number and the part letter —e.g., Fig. 2a, Fig. 3a–d, Figs. 2a and 3b
- Cite figures consecutively in the manuscript.
- List figure captions:
 - On a separate, double-spaced list or
 - At the end of the manuscript
- Do not include captions on actual figures.
- Do not imbed figures in the text.
- Put figure legends, which describe data points, in the upper right- or left-hand corner of the figure or in the caption.
- Number figure parts in the figure legend in the order in which they are discussed.
- Do not plot two-dimensional data as three-dimensional graphs.

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- If color is required, complete color figure form; otherwise, figures will appear in black and white.
 - Authors are responsible for paying color charges.
 - Current prices (subject to change without notice):
 - First figure: \$500
 - Each additional figure: \$150 each
- Upload figures consecutively to the Editorial Manager website and enter figure numbers consecutively in the description field when uploading the files.

Digital artwork

- Learn about the publication requirements for digital artwork (diagrams, drawings, graphs, and other line art) at <http://links.lww.com/ES/A42>.
- Save artwork as TIFF, PDF, Word Doc, PPT, or EPS files.
- Create artwork in the actual size (or slightly larger than) it will appear in the Journal; review Journal issues and measure the artwork typically shown, then scale image to match.
- Upload each figure to Editorial Manager in conjunction with your manuscript text and tables.
- Crop out any white or black space surrounding the image.
- Create artwork as vector files or save at a resolution of at least 1,200 dpi.
- Convert art created in a Microsoft Office program to a high-resolution PDF, or submit the Microsoft Office document.
- Save photographs, radiographs, and other halftone images at a resolution of at least 300 dpi.
- Save photographs and radiographs with text as postscript files or at a resolution of at least 900 dpi.
- Save and submit each piece of artwork as a separate file.
- Do not embed artwork in the text.

Format

- Prepare double-spaced, typewritten (no dot matrix) manuscripts on one side of 216 × 279 mm paper.
- Number pages consecutively.
- Choose margins along all edges to be at least 2.5 cm wide; margins may be justified.
- Indent all paragraphs but the first.
- Provide a title page (required) with:
 - Complete manuscript title.
 - Authors' full names and affiliations (each affiliation should be designated as a footnote, discussed below).
 - Name and address for correspondence, including fax number, telephone number, and email address; if you are the corresponding author and would prefer not to publish your email, please notify the *Health Physics* Journal [managing editor](#).

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- All relevant conflicts of interest and sources of funding under the heading “Conflicts of Interest and Sources of Funding”; include funding received for the work from any of the following organizations: National Institutes of Health, Wellcome Trust, Howard Hughes Medical Institute, and others
 - e.g., Conflicts of Interest and Sources of Funding: Author A has received honoraria from Company Z. Author B is currently receiving a grant (#12345) from Organization Y and is on the speaker’s bureau for Organization X, the continuing education organizer for Company A. For the remaining authors, no conflicts of interest or sources of funding are declared.
- For manuscripts other than letters, provide an abstract (structured or traditional) and keywords.
- Limit abstracts to 250 words or less (one double-spaced page).
- Do not cite references in the abstract.
- Do not use abbreviations or acronyms in the abstract.
- At the end of the abstract, list four keywords chosen from the [master list of key words](#).

Headings and titles

- Use the following main section headings for a paper or note and for other types of manuscripts as they apply (operational topics manuscripts, forum articles, and review articles may have some variation of these main section headings): introduction, materials and methods, results, discussion, and conclusions.
- Title of manuscript: Put in all uppercase.
- Main section headings: Center and put in all uppercase. Do not underline.
- Minor section headings: Start at the left margin and capitalize only the first word and proper nouns.
- Use only three orders of headings:
 - INTRODUCTION
 - CT exposure
 - Dose assessment.

For examples, refer to a recent issue of *Health Physics*.

Letters to the editor

- Use a letter to the editor to express a personal point of view.
- Confine comments to three double-spaced pages or less.
- Provide a title placed before the “Dear Editors” salutation.
- Place name and address of author(s) at the end of the letter; anonymous letters will not be published.
- If a letter comments on another author’s work, recognize that it will be sent to the author in question for possible reply; both the comment and reply letters will be published together.

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Numbers

- Do not use E-notation in text
- If necessary, use E-notation in supplemental digital content spreadsheets and other computer programs.

Punctuation

- Avoid end-of-line hyphenation.

References, Footnotes

- Put all references in correct format (refer to [General Guidelines, Section H.1](#), and [Appendix C: Reference Examples](#)); if references are in the incorrect format, the manuscript will be sent back to the author for revision before proceeding; changes made to incorrect or incomplete references in the stages after acceptance of the manuscript will be charged to the author.
- Ensure the accuracy of the reference list and information from other sources cited in the text; this is the responsibility of the author(s), not the copy editor.
- Check reference list before submittal; ensure that all references are cited in the text and all cited sources are in the reference section or footnoted, as appropriate.
- Submit all footnotes together on a separate page at the end of the article.
- List author affiliations as footnotes.
 - Designate the first author's affiliation as 1.
 - If any subsequent authors have different affiliations, provide a separate footnote for each author.
 - If all authors' affiliations are the same, place footnote 1 after the last author's name.

Tables

- Ensure that all data in tables are correct before the manuscript is submitted to *Health Physics*; all tables are typeset directly from the submitted manuscript.
- Place all tables in a separate file; *do not* embed tables in the text; editorial staff will move tables into the correct place in the text when your manuscript is prepared for review and publication.
- Upload each table separately.
- Number all tables sequentially in order of appearance using Arabic numbers.
- Put the caption above each table.
- In table titles, capitalize only the first word and proper nouns
 - e.g., results are shown in Table 1; Table 1. Results of New York City investigation.
- Use horizontal lines only (no vertical borders) to separate components of tables.
- Do not enclose tables in boxes.
- Identify each column and row with a descriptive title.
- Put units in parentheses.
- Use superscript notation for powers of 10; do not use E-notation
 - e.g., use 1×10^3 not 1E3

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- Single space data and align numbers on the decimal point.
- Precede decimal numbers less than one with a zero
—e.g., use 0.23 not .23
- For footnotes, use supercripted Roman lowercase letters sequentially in the order that they appear in the table
—e.g., ^aData from Smith et al. (2018)
- Include references for data that comes from another source. Citations may be placed in the caption, in the main body of the table, or in footnotes, as appropriate.

Trade names and manufacturers

- Put manufacturer's name and address (city, state if appropriate, country) in parentheses after first mention of a product, vendor, or manufacturer in text.

IV. SPECIFIC GUIDELINES FOR ASK THE EXPERTS WEBSITE

- SI disclaimer is to be included at the bottom of only those ATE questions and answers that have SI or metric units in them
—e.g., kg, km, cm, etc.
- When regulatory agencies provide limits in traditional units, present those units first, give SI units in parentheses, and provide the following footnote: The radon concentration units are given here in pCi L⁻¹ (called traditional units) because that is the unit used by the US Environmental Protection Agency. However, the Health Physics Society has adopted the SI (International System) of units and these are given in parentheses.
- For example, cite the Environmental Protection Agency's radon action level as "4.0 pCi L⁻¹ (150 Bq m⁻³)*." The asterisk refers to the footnote (above).

V. SPECIFIC GUIDELINES FOR ANSI/HPS STANDARDS

The HPS provides technical editing for standards prepared by American National Standards Institute (ANSI) committees N13 and N43. ANSI/HPS standards should follow the general guidelines in Section I, except as noted below.

Format

- In general, follow format used in recently published standards; allow variation to suit the specific material.
- Use one-column layout for front matter (but put committee member lists in two columns where possible) and two-column layout for text.
- Make margins 2.54 cm top and bottom; 3.18 cm left and right (Microsoft Office 2003 default).
- Put title in Arial 12, first-level headers in Arial 11, lower-level headers and text in Arial 10.
- Right justify text.

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Numbers, symbols, and units

- Encourage authors to use SI units only, although the standard operating procedure for Standards Operating Committee N13 (30 June 2011) allows the use of traditional units in parentheses after SI units.

Punctuation

- Don't use periods after final number of section numbers
—e.g. Section 3.3 or Section E.1

Spelling and hyphenation

- Hyphenate sparingly in two-column format

VI. ABOUT SI UNITS

It is HPS policy to use the International System of Units (SI) in all documents when expressing radiological quantities ([Position Statement PS025-0](#)). The guidance that follows is based on National Institute of Standards and Technology (NIST) Special Publication 330 (2008 edition, <https://www.nist.gov/pml/special-publication-330>) and NCRP Report No. 82, *SI Units in Radiation Protection and Measurements*.

SI and Acceptable Non-SI Units

The following table lists SI units and acceptable non-SI units related to radiation and commonly used in health physics practice. These units should be used in HPS publications. Additional SI and acceptable non-SI units can be found in NIST Special Publication 330 (2008 edition).

Quantity	Unit	Symbol
Absorbed dose (also specific energy imparted, kerma)	gray	Gy
Absorbed dose rate	gray per second	Gy s ⁻¹
Activity	becquerel	Bq (s ⁻¹)
Acceleration	meter per second squared	m s ⁻²
Area	square meter barn ^a	m ² b
Count rate	counts per second ^b counts per minute ^b	cps cpm
Density, mass density	kilogram per cubic meter	kg m ⁻³
Density, surface	kilogram per square meter	kg m ⁻²
Disintegration rate	disintegrations per second ^b disintegrations per minute ^b	dps, Bq (s ⁻¹) dpm
Dose equivalent (also ambient dose equivalent, directional dose equivalent, personal dose equivalent)	sievert	Sv

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Electric charge	coulomb	C
Electric current	ampere	A
Electric potential difference	volt	V
Energy	electronvolt ^c erg ^a joule	eV erg J
Exposure (x and gamma rays)	coulomb per kilogram	C kg ⁻¹
Force	newton	N
Length	meter angstrom ^a	m Å
Mass	kilogram	kg
Mass concentration	kilogram per cubic meter	kg m ⁻³
Power	watt	W
Pressure	bar ^a millimeter of mercury ^a pascal	bar mm Hg Pa
Speed, velocity	meter per second knot ^a	m s ⁻¹ kn
Temperature	degree Celsius	°C
Time, duration	second minute hour day	s min h d
Volume	cubic meter liter	m ³ L

^a Non-SI unit that may be used if SI definition is also provided (e.g., 1 b = 100 fm²)

^b Although these units are neither SI nor approved non-SI, they are commonly used in radiation protection and acceptable in HPS documents and web pages.

^c Units accepted for use with the SI

Prefixes

The following prefixes may be used with any of the SI and acceptable non-SI units. Additional SI-approved prefixes can be found in NIST Special Publication 330 (2008 edition).

Factor	Name	Symbol
10 ⁻¹⁸	Atto	a
10 ⁻¹⁵	Femto	f
10 ⁻¹²	Pico	p
10 ⁻⁹	Nano	n
10 ⁻⁶	Micro	μ
10 ⁻³	Milli	m
10 ⁻²	Centi	c
10 ³	Kilo	k

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10 ⁶	Mega	M
10 ⁹	Giga	G
10 ¹²	Tera	T

Converting to SI Units

Non-SI units not listed in Section A must be converted to SI units. The following table provides factors for converting traditional units for radiological quantities to SI units.

Additional conversion factors are available from NIST at

physics.nist.gov/Pubs/SP811/appenB9.html.

Quantity	Unit	Symbol	SI Conversion Factor
Activity	curie	Ci	1 Ci = 3.7×10^{10} Bq
Exposure (in air)	roentgen	R	1 R = 2.58×10^{-4} C kg ⁻¹ (air)
Absorbed dose	rad ^a	rad	1 rad = 1 cGy = 10^{-2} Gy
Dose equivalent	rem ^a	rem	1 rem = 1 cSv = 10^{-2} Sv

^a Rad and rem are both singular and plural; never add “s” for plural (100 rad, not 100 rads)

VII. STYLE GUIDES AND REFERENCES USED FOR HPS WEB OPERATIONS PUBLICATIONS

- The *Health Physics Society Publications Style Guide*, especially for items specific to writing for the nontechnical audience (check this guide first—we have adapted some of the guidelines that are in the others to better fit our audiences).
- The *Gregg Reference Manual*, Tenth or Eleventh Edition, for general grammar and style guidelines.
- *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers*, 8th Edition, 2014 (from the Council of Science Editors, formerly Council of Biology Editors, CBE) for general science-writing guidelines.
- *Merriam Webster’s Collegiate Dictionary*, Tenth or Eleventh Edition or online, for specific word usage and spelling preferences.

APPENDIX A: WORD LIST

Abbreviations, spelling, hyphenation, capitalization, and other style issues

AAAS: American Association for the Advancement of Science
AAHP: American Academy of Health Physics
AAPM: American Association of Physicists in Medicine
AARST: American Association of Radon Scientists and Technologists
ARRT: American Registry of Radiologic Technologists
ABET is now just ABET, no longer spelled out
ABHP: American Board of Health Physics
ABIH: American Board of Industrial Hygiene
ABMP: American Board of Medical Physics
A bomb: spell out atomic bomb
ABR: American Board of Radiology
ABSA: American Biological Safety Association
ACGIH: American Conference of Governmental Industrial Hygienists
ACR: American College of Radiology
ACS: American Chemical Society
AEC: US Atomic Energy Commission
AFRRI: Armed Forces Radiobiology Research Institute (USU: Uniformed Services University of the Health Sciences)
Agreement States
AIHA: American Industrial Hygiene Association
AIP: American Institute of Physics
airborne
ALARA: as low as reasonably achievable
ALI: annual limit on intake
alpha-emitting radionuclides
AMIPA: American Medical Isotope Production Act
AMUG: Air Monitoring Users Group
ANL: Argonne National Laboratory
ANS: American Nuclear Society
ANSI: American National Standards Institute
a priori: never hyphenate, never italicize
APS: American Physical Society
ARS: Acute Radiation Syndrome
ASC: accredited standards committees
ASSE: American Society of Safety Engineers
ASRT: American Society of Radiologic Technologists
ASTHO: Association of State and Territorial Health Officials
ASTM: American Society for Testing and Materials
ASTRO: American Society for Radiation Oncology (T is a leftover kept from an earlier name)
ATE: HPS Ask the Experts web feature

bachelor of arts, BA, bachelor's
bachelor of science, BS, bachelor's

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becquerel; unit of radioactive decay; SI unit: Bq
BEIR: National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation
beta-gamma radiation
beta radiation
breast-feeding
bylaws
byproduct (HPS exception to *Merriam Webster's Collegiate Dictionary*)

capital: city that is seat of government; the nation's capital; National Capital Region
capitol: building; US Capitol; Capitol Hill
CBCT: cone-beam CT
CDC: Centers for Disease Control and Prevention
CDRH: Center for Devices and Radiological Health
CEC: continuing education credit
CEL: continuing education lecture
centimeter: cm
century: 21st century
CFR: 10 CFR 35
CHP: certified health physicist
CIRMS: Council on Ionizing Radiation Measurements and Standards
clean up: verb; cleanup: noun and adjective
CM points: certification maintenance points
CNS: central nervous system
coauthor, cochair, codirector, coeditor
compare: cf.
Congress: capitalized when referring to the US Congress
congressional member, senator, representative: capitalize only when in place of or in front of a specific personal name
congressional bills: H.R. 2272; S. 761
copy editor, copyedit
coulombs per kilogram: C kg⁻¹; exposure; SI unit
cpm: counts per minute
CRCPD: Conference of Radiation Control Program Directors, Inc.
CRPA: Canadian Radiation Protection Association
CRPPH: Committee on Radiation Protection and Public Health
CT: computed tomography
curie: unit of radioactive decay; traditional (historical) unit: Ci
CV: curriculum vitae

D&D: decontamination and decommissioning
DAC: derived air concentration
database
day: d
DD&R: decontamination, decommissioning, and remediation
DDR: dose response relationship

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DDREF: dose and dose-rate effectiveness factor
decision making
degrees C instead of degrees F: to convert from degrees F $T(^{\circ}\text{C}) = (T(^{\circ}\text{F}) - 32) \times 5/9$
alt code 0176 ($^{\circ}$); leave a space between the number and $^{\circ}\text{C}$
DHHS: Department of Health and Human Services
DHS: US Department of Homeland Security
diplomate of ABHP (not diplomat); a diplomate of the ABHP is also a certified health physicist (CHP)
DOD: US Department of Defense
DOE: US Department of Energy
DOELAP: Department of Energy Laboratory Accreditation Program
dose-rate effectiveness factor
DOT: US Department of Transportation
DREF: dose-rate effectiveness factor
DTPA (or pentatate): diethylenetriaminepentaacetate
DU: depleted uranium

e.g. (for example): set off with commas
earth (dirt), Earth (our planet)
editor in chief
EDTA (or edetate): ethylenediaminetetraacetate
EEOICPA: Energy Employees Occupational Illness Compensation Program Act
EM: electron microscope
email
EMS: emergency medical services
EPA: US Environmental Protection Agency
EPRI: Electric Power Research Institute
ERR: excess relative risk
et al.: do not set off with commas; use “and others” or “and colleagues” in running text; use et al.
in the citation within the text; use all names in the references and resources
eTOC: *Health Physics* Journal electronic table of contents
ex officio: no hyphen

FAQ: frequently asked questions
FDA: US Food and Drug Administration
FEMA: Federal Emergency Management Agency
FGI: fluoroscopically guided interventions
fiber optics: two words as noun
Fiesta[®] ware
fiscal year: FY; fiscal year 2015; FY2015
fold: no hyphen when number is expressed in words (twofold); hyphen when number is
expressed as a figure (10-fold)
foodborne
foot: convert to cm or m
for example: e.g. (set off with commas)
FRC: Federal Radiation Council

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freeze-dry system

FRMAC: Federal Radiological Monitoring and Assessment Center

FUDS: Formerly Used Defense Sites

FUSRAP: Formerly Utilized Sites Remedial Action Program

gamma radiation

gamma spectroscopy

GHPA: Georgian Health Physics Association

GM: Geiger-Müller or Geiger-Mueller

GOA: US Government Accountability Office

gram: g

gray; absorbed dose; SI unit: Gy

groupware: software that allows people to share

half-life

handheld

health care (always two words, never hyphenate)

he or she (not he/she)

HEU: highly enriched uranium

HHS: US Department of Health and Human Services

home page

hour: h

HP: health physics, health physicist

HPS: Health Physics Society

HPSSC: Health Physics Society Standards Committee

i.e. (that is): set off with commas

IAEA: International Atomic Energy Agency

IATA: International Air Transport Association

ICC: HPS International Collaboration Committee

ICNIRP: International Commission on Non-Ionizing Radiation Protection

ICRP: International Commission on Radiological Protection

ICRP 38

IEA: International Energy Agency

IEM: International Experts Meeting

inch: convert to cm

INL: Idaho National Laboratory

INMM: Institute of Nuclear Materials Management

INPO: Institute of Nuclear Power Operators

internet

international unit: IU

IRPA: International Radiation Protection Association

ISO: International Standards Organization

IU: International Unit

IUP: Integrated University Program

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JPEG

Jr., Sr., or numerals following a person's name—do not use commas unless specified by that person (Tom Smith Jr.; Jim Johnson III)

kilocalorie: kcal

kilogram: kg

kilometer: km

kiloton: KT

LAC: HPS Local Arrangements Committee

LANL: Los Alamos National Laboratory

LBNL: Lawrence Berkeley National Laboratory

LCD: liquid crystal display (abbreviate; never LCD display)

LED: light-emitting diode (abbreviate)

LEU: low-enriched uranium

linear no-threshold: LNT

liter: L

LLRW: low-level radioactive waste

LLW: low-level waste

log linear; log-linear analysis

long-term

longtime

LSO: laser safety officer

LSS: Life Span Study

man-made

Mann-Whitney U test

MARSSIM: Multi-Agency Radiation Survey and Site Investigation Manual

MARLAP: Multi-Agency Radiological Laboratory Analytical Protocols Manual

MARSAME: Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual

master of science, MS, master's

MB: megabytes

MCART: Medical Countermeasures Against Radiological Threats

MCNP: Monte Carlo N-Particle

MDA: minimum detectable activity

mean: spell out (not X or M)

megabytes: MB

meter: m

micron: μm

milligram: mg

milliliter: mL

millimeter: mm

millimeters of mercury: mm Hg

minimum detectable activity: MDA

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minute: min

MIRD: medical internal radiation dosimetry

MIRD Committee: Committee on Medical Internal Radiation Dose

mL: milliliter

molecular weight: MW

month: mo

MRI: magnetic resonance imaging

multi: prefix; no hyphen (multichannel analyzer, multidisciplinary)

nanometer: nm

NAOSH week: North American Occupational Safety & Health week

NAREL: National Analytical Radiation Environmental Laboratory

NARR: National Alliance for Radiation Readiness

NAS: National Academy of Sciences

NASA: National Aeronautics and Space Administration

NBS: National Bureau of Standards

NCI: US National Cancer Institute

NCRFO: National Center for Radiation Field Operations

NCRP: National Council on Radiation Protection and Measurements

NCRP Report No. 45

NDAA: National Defense Authorization Act

NEHA: National Environmental Health Association

NEI: Nuclear Energy Institute

NESHAP: National Emission Standards for Hazardous Air Pollutants

NGSS: Next Generation Science Standards

NIAID: National Institute of Allergy and Infectious Diseases

NIH: National Institutes of Health

NIOSH: National Institute for Occupational Safety and Health

NIST: National Institute of Standards and Technology

NMR: nuclear magnetic resonance

NNSA: National Nuclear Security Administration

NNSA/GTRI: National Nuclear Security Administration/Global Threat Reduction Initiative

nonionizing (no hyphen)

NORM: naturally occurring radioactive material

NRC: US Nuclear Regulatory Commission

NRRT: National Registry of Radiation Protection Technologists

NRSB: National Radon Safety Board

NRSB: Nuclear and Radiation Studies Board

NTS: Nevada Test Site

number: No. (not no.)

OAS: Organization of Agreement States

OECD: Organisation for Economic Co-operation and Development

OMB: Office of Management and Budget

online (no hyphen)

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ORAU: Oak Ridge Associated Universities

ORISE: Oak Ridge Institute for Science and Education

ORNL: Oak Ridge National Laboratory

OSHA: Occupational Safety and Health Administration

OSRP: Off-Site Source Recovery Project (operated by LANL)

OSTP: Office of Science and Technology Policy

over: prefix; no hyphen (overanalyze, overconservative, etc.)

PAGs: protective action guides (EPA PAG Manual)

PAPC: polyaminopolycarboxylic (PAPC) acids

parts per million: ppm

parts per billion: ppb

past president

PDF

PDS: HPS professional development school

PEP: Professional Enrichment Program

percent: spell out in main text when not preceded by a number; use % symbol in figures and tables and in main text when preceded by a number

PET: positron emission tomography

PhD, doctorate, doctor of philosophy

PNNL: Pacific Northwest National Laboratory

post: prefix; no hyphen (postaccident, postirradiation, etc.)

power lines

pre: prefix; no hyphen (prearrange, pretreatment, etc.)

president-elect: lowercase elect except when used in a heading or title of an article or document

president emeritus: the title of each past president of the Society after completion of the year of service on the Board of Directors as the immediate past president

probability: p (lowercase, italics when used in a formula)

Pu: plutonium

publications: ICRP 110, NCRP Report No. 45

QA-PR: quality assurance-peer review

QC: quality control

QM: quality management

quasi-experimental

quotation marks and apostrophes: curly in *Health Physics*, *Operational Radiation Safety*, and PDF documents; straight on HPS website

rad: absorbed dose; traditional (historical) unit; never add “s” to make plural; convert to Gy

Ra: radium

radiofrequency

RDD: radiological dispersal device

REAC/TS: Radiation Emergency Assistance Center/Training Site

REFs: radiation effectiveness factors

regulations: 10 CFR 35

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rem: dose equivalent; traditional (historical) unit; never add “s” to make plural; convert to Sv

REM: reflection electron microscope

RERF: Radiation Effects Research Foundation

Rn: radon

roentgen: exposure in air; traditional (historical) unit: R; convert to C kg⁻¹

RP: radiological protection

RPI: Rensselaer Polytechnic Institute

RRS: Radiation Research Society

RSNA: Radiological Society of North America

RSO: radiation safety officer

rulemaking

S&PIC: HPS Scientific and Public Issues Committee

school-age children

SD: standard deviation

SDWA: Safe Drinking Water Act

SE: standard error

second: s

sem (lowercase): standard error of the mean

SEM: scanning electron microscope

sievert: dose equivalent; SI unit: Sv

SI units: International System units

SNF: spent nuclear fuel

SNMMI: Society of Nuclear Medicine and Molecular Imaging

SNMTS: Society of Nuclear Medicine Technologist Section

SOP: standard operating procedure

SSC: HPS Science Support Committee

SSC: HPS Student Support Committee

standard deviation: SD

standard error: SE

standard error of the mean: sem (lowercase); spell out at first use in text; okay as abbreviation in tables

state names: spell out full name of state in running text; use two-letter postal abbreviations without periods in addresses

STEM: scanning transmission electron microscope

Student's *t*-test

Suntanning

TEM: transmission electron microscope

TENORM: technologically enhanced naturally occurring radioactive material

that is: i.e. (set off with commas)

TIFF

TLD: thermoluminescent dosimeter

TRU: transuranic

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U: uranium

ultraviolet: UV

United States, United Kingdom; US, UK: spell out United States and United Kingdom when used as a noun; abbreviate when used as an adjective

UNSCEAR: United Nations Scientific Committee on the Effects of Atomic Radiation

USACE: US Army Corps of Engineers

USGS: US Geologic Survey

USTUR: United States Transuranium and Uranium Registries

USU: Uniformed Services University of the Health Sciences (AFFRI: Armed Forces Radiobiology Research Institute)

USPHS: US Public Health Service

VA: US Department of Veterans Affairs

versus: vs.; never spelled out

vice president

VOICE credits: Verification of Involvement in Continuing Education credits

volt: V

WARP: Where Are the Radiation Professionals?

Washington, DC

waterborne

watt: W

WBC: white blood cell

web

web address

webmaster

web page

website

week: wk

WIN: Women in Nuclear

WIPP: Waste Isolation Pilot Plant

World Wide Web

World War I, World War II: spell out

x rays (no hyphen when used as a noun)

x-ray machine (hyphen when used as an adjective)

year: y

APPENDIX B: ALT CODES AND HTML CODES

ALT codes for symbols often used in HPS documents (Several ALT Code charts can be found at usefulshortcuts.com/alt-codes.)

- Currency
 - cent (¢): 155
 - dollar (\$): 36
 - euro (€): 0128
 - frank/gulder (f): 159
 - peseta (Pts): 158
 - pound (£): 156
 - yen (¥): 157
- General symbols
 - copyright (©): 0169
 - degree (°C): 0176
 - em dash (—): 0151
 - en dash (–): 0150
 - inverted exclamation (¡): 173
 - inverted question (¿): 168
 - registered symbol (®): 0174
 - trademark (™): 0153
- Greek letters
 - alpha (α): 224
 - beta (β): 225
 - gamma (Γ): 226
 - mu (μ): 230
 - pi (π): 227
- Letters with accents
 - à: 0224
 - á: 0225
 - ä: 0228
 - ç: 0231
 - è: 0232
 - é: 0233
 - ë: 0235
 - ñ: 164
 - ò: 0242
 - ó: 0243
 - õ: 0245
 - ü: 0252
- Mathematical symbols
 - +: 43
 - -: 45
 - ×: 0215
 - ÷: 0247
 - ±: 241
 - ≥: 242
 - ≤: 243
 - √: 251
 - °: 248
 - #: 35
 - ∞: 236
 - Σ: 228

HTML codes often used in editing HPS website (A useful website for finding mathematical, Greek, and symbolic characters for HTML is w3.org/TR/html4/sgml/entities.html#h-24.3.)

- body of document <body>
- bold
- center <center>
- email link you@yourdomain.com
- italic <i>
- paragraph <p>
- single line break

- superscript <sup>
- subscript <sub>
- title of document <title>
- underline <u>
- website link http://www.domain.com

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APPENDIX C: REFERENCE EXAMPLES

Agency for Toxic Substances and Disease Registry. Toxicological profile for uranium [online]. Atlanta, GA: US Department of Health and Human Services, Public Health Service; 2013. Available at <http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=440&tid=77>. Accessed 28 February 2020.

Argonne National Laboratory. Human health fact sheet: polonium [online]. 2017. Available at http://www.remm.nlm.gov/ANL_ContaminantFactSheets_All_070418.pdf#page=36. Accessed 28 February 2020.

Boice JD Jr. Fukushima conference in February 2013 (The Boice Report #11). Health Physics News XLI(4):13–15 [online]; 2013. Available at https://ncrponline.org/wp-content/themes/ncrp/PDFs/BOICE-HPnews/11_Fukushima-Conf_Apr2013.pdf. Accessed 28 February 2020.

CANCERNET-PDQ [database online]. Bethesda, MD: National Cancer Institute; 1996. Updated 17 July 2015. Available at <http://www.cancer.gov/publications/pdq>. Accessed 28 February 2020.

Centers for Disease Control and Prevention. Information about public health issues related to polonium-210 contamination in the United Kingdom [online]. 2008. Available at <https://emergency.cdc.gov/radiation/isotopes/polonium/qa.asp>. Accessed 28 February 2020.

Council of Science Editors. Scientific style and format: the CSE manual for authors, editors, and publishers. 8th ed. Chicago, IL: The University of Chicago Press; 2014.

Dritschilo A. Cancer and carcinogenesis. In: Mossman KL, Mills WA, eds. The biological basis of radiation protection practices. Baltimore, MD: Williams & Wilkins; 1992:77–88.

Federal Register:

US Environmental Protection Agency. National oil and hazardous substances pollution contingency plan; final rule. Washington, DC: 40 CFR Part 300, 55 FR:8666–8865; 1990.

National Institute of Standards and Technology. Metric system of measurement: interpretation of the International System of Units for the United States. Washington, DC: 63 FR:40334–40340; 1998.

US Department of Health and Human Services. Guidelines for determining the probability of causation under the Energy Employees Occupational Illness Compensation Program Act of 2000; final rule. Washington, DC: 42 CFR Part 81, 67 FR:22296–22314; 2002.

US Department of Homeland Security, Federal Emergency Management Agency. Planning guidance for protection and recovery following radiological dispersal device (RDD) and improvised nuclear device (IND) incidents. 73 FR:45029–45048 [online]; 2008. Available at <http://www.gpo.gov/fdsys/pkg/FR-2008-08-01/html/E8-17645.htm>. Accessed 28 February 2020.

Health Physics Society Publications Style Guide

Gardiner C, Di Vizio D, Sahoo S, They C, Witwer KW, Wauben M, Hill AF. Techniques used for the isolation and characterization of extracellular vesicles: results of a worldwide survey. *J Extracell Vesicles* 5:32945 [online]; 2016. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5090131/>. Accessed 28 February 2020.

Health on the Net Foundation. Health on the Net Foundation code of conduct (HONcode) for medical and health web sites [online]; 2013. Available at <https://www.hon.ch/HONcode/Conduct.html>. Accessed 28 February 2020.

Health Physics Society. Radiation exposure from medical diagnostic imaging procedures [online]. 2006. Available at <http://www.hps.org/documents/meddiagimaging.pdf>. Accessed 28 February 2020.

Health Physics Society. Answer to question #9440 submitted to Ask the Experts [online]. 2010. Available at <http://hps.org/publicinformation/ate/q9440.html>. Accessed 28 February 2020.

Health Physics Society. Consumer products containing radioactive materials. Health Physics Society Fact Sheet [online]. 2010. Available at <http://hps.org/documents/consumerproducts.pdf>. Accessed 28 February 2020.

Health Physics Society. Suntanning and tanning booths [online]. 2016. Available at <http://www.hps.org/publicinformation/ate/faqs/tanningbooths.html>. Accessed 28 February 2020.

Health Physics Society. American national standard: fissile material symbol. McLean, VA: HPS; ANSI/HPS N12.1-2015; 2018.

Health Physics Society. Radiation risk in perspective. Health Physics Society Position Statement [online]. 2019. Available at <http://hps.org/documents/radiationrisk.pdf>. Accessed 28 February 2020.

Inkret WC, Efurud DW, Miller G, Rokop DJ, Benjamin TM. Applications of thermal ionization mass spectrometry to the detection of ^{239}Pu and ^{240}Pu intakes. *Int J Mass Spectros* 178:113–120; 1998. DOI:10.1016/S1387-3806(98)14084-8.

Institute of Electrical and Electronics Engineers. IEEE standard for qualifying class 1E equipment for nuclear power generating stations. Piscataway, NJ: IEEE Standards Association; IEEE Standard 323(TM)-2003 (R2008); 2008.

International Atomic Energy Agency. Factsheets & FAQs: polonium-210 [online]. 2008. Available at https://www.iaea.org/sites/default/files/faqs_2006_-_polonium-210.pdf. Accessed 28 February 2020.

International Commission on Radiological Protection. Limits for intakes of radionuclides by workers. Oxford: Pergamon Press; ICRP Publication 23, Part 1; 1979.

Health Physics Society Publications Style Guide

International Commission on Radiological Protection. Relative biological effectiveness (RBE), quality factor (Q), and radiation weighting factor (w_R). Oxford: Pergamon Press; ICRP Publication 92; 2003.

Jenkins TA. Comparison of energy response between EICs and HPICs. Pocatello, ID: Idaho State University; 2005. Thesis.

Kralick SC, Watson JE Jr, Croslin SW. Neutron dosimetry in the containment of a pressurized water reactor using a neutron-sensitive dosimetry system. *Health Phys* 50:761–768; 1986.

LaPorte RE, Marler E, Akazawa S, Sauer F, Gamboa C, Shenton C, Glosser C, Villasenor A, Maclure M. The death of biomedical journals. *BMJ* 310:1387–1390 [online]; 1995. Available at <http://www.ncbi.nlm.nih.gov/pubmed/7787546>. Accessed 28 February 2020.

Miller CW, Hoffman FO. An analysis of reported values of the environmental half-time for radionuclides deposited on the surfaces of vegetation. In: environmental migration of long-lived radionuclides. Proceedings of an International Atomic Energy Agency conference. Vienna: International Atomic Energy Agency; IAEA-SM-257/63; 1982: 97–111.

National Academies/National Research Council. BEIR V: health effects of exposure to low levels of ionizing radiation. Washington, DC: National Academies Press; 175–177; 1990.

National Academies/National Research Council. BEIR IV: health risks of radon and other internally deposited alpha-emitters. Washington, DC: National Academies Press; 1988.

National Council on Radiation Protection and Measurements. Ionizing radiation exposure of the population of the United States. Bethesda, MD: NCRP; NCRP Report No. 160; 2009.

National Council on Radiation Protection and Measurements. Natural background radiation in the United States. Washington, DC: NCRP; NCRP Report No. 45; 1975.

National Council on Radiation Protection and Measurements. Exposure of the population in the United States and Canada from natural background radiation. Bethesda, MD: NCRP; NCRP Report No. 94; 1992 [updates and supersedes NCRP Report No. 45].

National Institute of Standards and Technology. The International System of Units (SI). Gaithersburg, MD: National Institute of Standards and Technology; Special Publication 330; 2008.

North Carolina Chapter of the Health Physics Society. Nuclide safety data sheet: polonium-210 [online]. 2006. Available at <http://www.hpschapters.org/northcarolina/NSDS/210PoPDF.pdf>. Accessed 28 February 2020.

Rad Elec Inc. Internal document, technical note: inherent discharge of electrets. Frederick, MD: Rad Elec Inc.; 2004.

Health Physics Society Publications Style Guide

Rad Elec Inc. E-PERM system manual, Part II. Frederick, MD: Rad Elec Inc.; Revision I; 2001.

Stannard JN. Radioactivity and health: a history. Washington, DC: US Department of Energy; 1988.

Turner JE. Atoms, radiation and radiation protection. 3rd ed. Weinheim, Germany: Wiley-VCH; 2007.

United Nations Scientific Committee on the Effects of Atomic Radiation. Effects of ionizing radiation; Vol. II: scientific annexes C, D, E. New York: United Nations; 2009.

United Nations Scientific Committee on the Effects of Atomic Radiation. Sources and effects of ionizing radiation. New York: United Nations; 2000.

US Department of Energy, Idaho Operations Office. Idaho National Engineering and Environmental Laboratory site environmental report: calendar year 2004. Idaho Falls, ID: US DOE; DOE/ID-12082(04); 2005.

US Nuclear Regulatory Commission. Standards for protection against radiation. Washington, DC: US Government Printing Office; 10 CFR Part 20; 1992.

US Federal Statutes and Legislative Documents.

From the National Library of Medicine's *Citing Medicine, 2nd edition, The NLM Style Guide for Authors, Editors, and Publishers*, which states: "The legal profession employs a unique system of citation unlike that generally used in medicine and the sciences. This legal style is described in detail in *The Bluebook: A Uniform System of Citation* (18th ed. Cambridge [MA]: Harvard Law Review Association; 2005). Because this legal standard is well established and its citation format accurately identifies legal documents for retrieval from law and general libraries, no attempt has been made to force references to legal materials such as public laws and hearings into a traditional format. Instead, examples of the common types of legal citations are provided here and the reader should consult *The Bluebook* for details."

- Unenacted Bill
 - originated in the House
Treat Physicians Fairly Act, H.R. 4872, 109th Cong., 2nd Sess. (2006).
 - originated in the Senate
Hurricane Katrina Medicaid and SCHIP Relief Act, S. 1688, 109th Cong., 1st Sess. (2005).
- Public Law
 - National All Schedules Prescription Electronic Reporting Act of 2005, Pub. L. 109-60, 119 Stat.1979 (11 August 2005).
 - Veterans Hearing Loss Compensation Act of 2002, Pub. L. No. 107-9, 115 Stat. 11 (24 May 2001).
- United States Code
 - Occupational Safety and Health Act (OSHA) of 1970, 29 U.S.C. Sect. 651 (2000).

Health Physics Society Publications Style Guide

- Congressional Hearing
 - House
 - Plant biotechnology research and development in Africa: challenges and opportunities: hearing before the Subcommittee on Research of the House Committee on Science, 108th Cong., 1st Sess. (12 June 2003).

 - Arsenic in drinking water: an update on the science, benefits and cost: hearing before the Subcommittee on Environment, Technology, and Standards of the House Committee on Science, 107th Cong., 1st Sess. (4 October 2001).
 - Senate
 - Public health preparedness in the 21st century: hearing before the Subcommittee on Bioterrorism and Public Health Preparedness of the Senate Committee on Health, Education, Labor, and Pensions, 109th Cong., 2nd Sess. (28 March 2006).

 - Examining the effects of bovine spongiform encephalopathy (BSE) on US imports and exports of cattle and beef: hearing before the Senate Committee on Agriculture, Nutrition, and Forestry, 109th Cong., 1st Sess. (3 February 2005).
- Congressional Report
 - House report
 - Providing for consideration of H.R. 525, Small Business Health Fairness Act of 2005, H.R. Rep. No. 109-183 (25 July 2005).

 - Methamphetamine Remediation Research Act of 2005, H.R. Rep. No. 109-42 (13 April 2005).
 - Senate report
 - Foundation for the National Institutes of Health Improvement Act, S. Rep. No. 109-75 (26 May 2005).

 - Meeting the Housing and Service Needs of Seniors Act of 2005, S. Rep. No. 109-178 (15 November 2005).