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technIcal report

**PES-TR??**

**IEEE Power & Energy Society**

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**(GROUP NAME THAT WROTE THE REPORT)**

Example

**TASK FORCE ON**

**TURBINE-GOVERNOR MODELING**

Chair: Insert Name

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etc.

**ACKNOWLEDGMENTS (Optional)**

The following are examples of acknowledgments.

The Task Force is truly grateful for the support of our sponsoring subcommittee and committee.

The Task Force gratefully acknowledges the contributions of T. Edison, G. Westinghouse, N. Tesla, A. Volta and A. Ampere to the electric power industry.

The Task Force gratefully acknowledges the principal authors/contributors of the following sections:

* Section 1: T. Edison
* Section 2: G. Westinghouse and N. Tesla
* Section 3: A. Ampere, N. Tesla and A. Volta
* Appendix A: T. Edison

**KEYWORDS**

Provide up to 10 keywords (in alphabetical order) to help identify the major topics of the paper.

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# INTRODUCTION (Heading 1)

This template provides authors with most of the formatting specifications needed for preparing electronic versions of PES Technical Reports. All standard report components have been specified for three reasons:

(1) ease of use when formatting individual reports

(2) automatic compliance to electronic requirements that facilitate the concurrent or later production of electronic products

(3) conformity of style for all PES Technical Reports.

Margins, line spacing, and type styles are built-in; type styles are provided throughout this document and are identified within parentheses following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

# EASE OF USE (Heading 1)

## Template (Heading 2)

This template has been tailored for output on US letter-sized paper.

## Maintaining the Integrity of the Specifications (Heading 2)

The template is used to format your paper and style the text. All margins, column widths, line spaces, and text fonts are prescribed; please do not alter them. You may note peculiarities. For example, the heading margin in this template measures proportionately more than is customary. This measurement and others are deliberate, using specifications that anticipate your paper as one part of the entire proceedings, and not as an independent document. Please do not revise any of the current designations.

# TECHNICAL REPORT PREPARATION (Heading 1)

Please use automatic hyphenation and check your spelling. Additionally, be sure your sentences are complete and that there is continuity within your paragraphs. Check the numbering of your graphics (figures and tables) and make sure that all appropriate references are included. Please take note of the following items when proofreading spelling and grammar.

## Abbreviations and Acronyms (Heading 2)

Define abbreviations and acronyms the first time they are used in the text. Abbreviations such as IEEE, SI, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or section headings unless they are unavoidable.

## Units (Heading 2)

Metric units are preferred for use in IEEE publications in light of their global readership and the inherent convenience of these units in many fields. In particular, the use of the International System of Units (Systeme Internationale d’Unites or SI Units) is advocated. This system includes a subsystem of units based on the meter, kilogram, second, and ampere (MKSA). U.S. Customary units, or British units, may be used as secondary units (in parentheses). An exception is when U.S. Customary units are used as identifiers in trade, such as 3.5-inch disk drive.

Avoid combining SI and U.S. Customary units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.

Do not mix complete spellings and abbreviations of units: “Wb/m2” or “webers per square meter,” not “webers/m2.” Spell out units when they appear in text: “. . . a few henries,” not “. . . a few H.”

Use a zero before decimal points: “0.25,” not “.25.” Use “cm3,” not “cc.”

## Equations (Heading 2)

The equations are an exception to the prescribed specifications of this template. You will need to determine whether or not your equation should be typed using either the Times New Roman or the Symbol font (please no other font). To create multileveled equations, it may be necessary to treat the equation as a graphic and insert it into the text after your paper is styled. Use of the Microsoft Equation Editor or the *MathType* commercial add-on for MS Word for math objects in your paper is permissible (Insert | Equation *or* MathType Equation). “Float over text” should *not* be selected. Number equations consecutively. Equation numbers, within parentheses, are to position flush right, as in (1), using a right tab stop. To make your equations more compact, you may use the solidus   
( / ), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash, as shown in (1), rather than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in

−δ 

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## **Footnotes** (Heading 2)

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the page in which it was cited. Do not put footnotes in the reference list. Use letters for table footnotes.

## Some Common Mistakes (Heading 2)

* The word “data” is plural, not singular.
* The subscript for the permeability of vacuum μ0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o.”
* In American English, commas and periods are located inside quotation marks; semicolons and colons are located outside quotation marks. Question and exclamation marks are located within quotation marks only when they are part of the quote. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
* A graph within a graph is an “inset,” not an “insert.” The word “alternatively” is preferred to the word “alternately” (unless you really mean something that alternates).
* Do not use the word “essentially” to mean “approximately” or “effectively.”
* In the title, if the words “that uses” can accurately replace the word “using,” capitalize the “u”; if not, keep “using” lower-cased.
* Be aware of the different meanings of the homophones “affect” and “effect,” “complement” and “compliment,” “discreet” and “discrete,” “principal” and “principle.”
* Do not confuse “imply” and “infer.”
* The prefix “non” is not a word; it should be joined to the word it modifies, usually without a hyphen.
* There is no period after the “et” in the Latin abbreviation “et al.”
* The abbreviation “i.e.” means “that is,” and the abbreviation “e.g.” means “for example.”

# USING THE TEMPLATE (Heading 1)

This document should be used as a template for preparing a PES Technical Report. You may type over sections of the document, cut and paste into it, and/or use markup styles.

Duplicate the template file by using the Save As command.

## Identify the Headings (Heading 2)

Headings are organizational devices that guide the reader through your paper. There are two types: component headings and text headings.

Component headings identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is “Heading 1.” Use “Figure caption” for your figure captions, and “table heading” for your table title. Run-in headings will require you to apply a style (such as italic) to differentiate the heading from the text.

Text headings organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text heading because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level heading should be used and, conversely, if there are not at least two sub-topics, then no subheadings should be introduced. Styles named “Heading 1,” “Heading 2,” and “Heading 3” are prescribed.

### Members and Contributors (Heading 3)

The title of the group that prepared the document, including the Chair, Co-Chair(s), Editor(s), Members and/or Contributors shall be listed on page iii.

## Figures and Tables (Heading 2)

### Figures (Heading 3)

* Figures should be numbered consecutively using Arabic numerals.
* Use bold 12 point Times New Roman for figure captions.
* Use words rather than symbols or abbreviations when writing figure axis labels to avoid confusing the reader. As an example, write the quantity “Magnetization,” or “Magnetization, M,” not just “M.”
* If including units in the label, present them within parentheses.
* Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]},” not just “A/m.”
* Do not label axes with a ratio of quantities and units. For example, write “Temperature (K),” not “Temperature/K.”

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* Tables should be numbered consecutively using Arabic numerals.
* Use bold 12 point Times New Roman for table titles (labels).
* Use bold 10 point Times New Roman for table headings and subheadings.
* Use 10 point Times New Roman for text (table copy) within the table.
* Use words rather than symbols or abbreviations when writing table headings/subheadings to avoid confusing the reader. As an example, write “Transient Recovery Voltage,” not just “TRV.” Do not label headings/ subheadings only with units. If abbreviations must be used, define the abbreviation as a footnote to the table or in the text immediately preceding the table.
* If including units in the heading/subheading, present them within parentheses. For example, “Temperature (K).”

### Positioning Figures and Tables (Heading 3)

* Figures and tables should be centered in the page (see Table 1 and Fig. 1).
* Figure captions should be centered below the figures.
* Table labels should be centered above the tables.
* Insert figures and tables after they are cited in the text as close to the citation as possible.
* Use the abbreviation “Fig. 1,” even at the beginning of a sentence.

TABLE 1. Table Type Styles

| Table Heading | Table Column Heading | | |
| --- | --- | --- | --- |
| Table column subheading | Subheading | Subheading |
| copy | More table copya |  |  |

a. Example of a Table footnote.

We suggest that you use a text box to insert a graphic (which is ideally a 300 dpi TIFF or EPS file, with all fonts embedded) because, in an MSW document, this method is somewhat more stable than directly inserting a picture.

To have non-visible rules on your frame, use the MSWord “Format” pull-down menu, select Shape Outline > No Outline.

Fig. 1. Example of a figure caption.

# REFERENCES (Heading 1)

References are important to the reader; therefore, each citation must be complete and correct. There is no editorial check on references; therefore, an incomplete or wrong reference will be published unless caught by a reviewer and will detract from the authority and value of the paper. References should be readily available publications.

Footnotes should be used for the references. List only one reference per footnote. If a reference is available from two sources, each should be listed as a separate footnote.

See the footnotes below for samples of the correct formats for the following types of references:

* periodicals[[1]](#footnote-1),[[2]](#footnote-2)
* books[[3]](#footnote-3),[[4]](#footnote-4),[[5]](#footnote-5)
* technical reports[[6]](#footnote-6),[[7]](#footnote-7)
* unpublished papers (even if they have been submitted for publication)[[8]](#footnote-8),[[9]](#footnote-9),[[10]](#footnote-10)
* papers published in translation journals[[11]](#footnote-11) (Please give the English citation first, followed by the original foreign-language citation.)
* papers that are in press (papers accepted for publication, but not yet published)[[12]](#footnote-12)
* papers from conference proceedings (published)[[13]](#footnote-13)
* dissertations[[14]](#footnote-14)
* standards[[15]](#footnote-15)
* patents[[16]](#footnote-16)

To create a footnote, place your cursor where the footnote citation should appear (in general, the footnote citation should follow the sentence punctuation) and click “Insert Footnote” in the Footnotes section of the References tab. Then insert the text of the footnote. Unless there are six authors or more, give all authors’ names; do not use et al. Capitalize only the first word in a paper title, except for proper nouns and element symbols. The footnotes will be numbered automatically.

1. SAMPLE HEADING (Heading A1)

Text

* 1. Sample Heading (Heading A2)

Text

* + 1. Sample Heading (Heading A3)

Text

* + - 1. Sample Heading (Heading A4)

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Text

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