

# API Ballot Comments Sheet

8/27/2007

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**Ballot: Review of API 546**

**Start Date:** 7/20/07

**Closing Date:** 8/24/07

**AMS Ballot ID:** 1,194

**Associate:** Gordon Robertson

**Coordinator:** Gordon Robertson

**Proposal:**

# API Ballot Comments Sheet

8/27/2007

86905 Gabe D'Alleva

ExxonMobil

Specification Section	Type	Comment	Suggested Change
546 body	Other	paragraph alignment is incorrect at many locations, some (but not all examples are ; 2.2.1.1, 2.2.1.3, 2.3.1.6	Correct format and standardize symbol usage.
		Page 11, paragraph number 2.3.1.2 seems to incorrectly have a strike through	
Data Sheets	Editorial	Some bullet sizes are irregular, see paragraph bullets, 3.6.4, 6.2.2.1.g, 6.5 All four sets of machine data sheets show/print partial word "coi" on data sheet page 10, line 21.	Reformat line so entire word appears in print.  Delete "Check boxes" under Required column on all four sets of data sheets, page 10, lines 8, 24 & 33.
		All four sets of data sheets page 10 of 11, lines 8, 24 & 33 show in bold type the "typical" (required by 546) tests and also show a "Required" check box. Suggest we delete check boxes for these 3 lines on all 4 sets of data sheets since these are required by 546. Confusion may result if boxes are not checked on whether they are required or not.	
Appendix B	Editorial	Appendix "B" cover sheet is incorrectly labeled Synchronous Motor when it should read "Synchronous Generator"	Delete the word "Motor" from title and replace it with "Generator"
Appendix C	Editorial	Page 1, delete extra period on last line to right of "n" item Page 2, add periods after; B.1, item b, B.5 items a & c, B.6 items a & b Page 2 Relocate section "b.6" to page 3 to make room for, and insert Footer notes a, b & c same as in pages 1 and 3 Page 3, Align at top of page align Proposal, Review and Final lines so they appear and are formatted same as in Pages 1 and 2. Page 3, insert B. 6 items a, b & c (from page 2) to make room for footnotes at bottom of page 2. Page 3, Extra periods on line E1, E2 & E3 reference paragraphs Page 3, add periods after E1, E2 & E3	Make format changes described above.

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Specification Section	Type	Comment	Suggested Change
Appendix E Motor and Generator Data Sheet Guide	Technical	<p>Page 28 of 32, guide for line 22 Partial Discharge Test. There is no specific guidance on what criteria to use to determine "acceptable" PD levels. The words "significant deviation" are used, but there is no guidance on how a typical user can determine what is significant or not. This test places the purchaser in a no win situation, the purchaser will have to accept the vendor's acceptance criteria which is normally unpublished and not available until the day of the test (if then). The user can require cut coil samples and find voids, can require PD tests the results of which can be open to "interpretation" between the user and manufacturer with no clear cut acceptance guidelines. Regardless of the test results the user will be forced to accept the product the manufacturer provides irrespective of the quantity and size of voids and irrespective of the PD test results.</p>	<p>PD testing was added to replace "void free" insulation requirement on 4 kV and other motors. Void free was too ambiguous a term leaving the manufacturers open to individual inspector judgement. PD testing with no generally accepted test criteria also leaves the user at the manufacturer's judgement essentially forcing the user to accept whatever the manufacturer deems acceptable. Some values, guidelines or definition of the word "significant" should be added to assist the user in determining what is or is not acceptable.</p>
2.4.6.1.2	Technical	<p>2.4.6.1.2 Note 2 has some requirements in it pertaining to separation margins. My understanding was that specs/requirements were not to be put in notes. (comment by John Kocur of ExxonMobil)</p>	<p>I would recommend that this be a new paragraph. (comment by John Kocur of ExxonMobil)</p>
2.4.6.1.1	Technical	<p>2.4.6.1.1 specifies separation margins of 15%. The note asks for 20%. Not sure why the difference, is it rotor modes vs. structural modes? (Comment by John Kocur)</p>	<p>Clarify (Comment by John Kocur)</p>
2.4.6.1.3	Technical	<p>2.4.6.1.3 is poorly written. Structural modes will almost always involve the purchased equipment due either to its weight to the structural or by adding additional flexibility to the overall supporting structure (rotor support that is.) (Comment by John Kocur)</p>	<p>I would make Note 2 a new paragraph stating the separation margins for structural modes (if different than 2.4.6.1.1) and remove that language from 2.4.6.1.3. I would then create a new paragraph that places the responsibility of calculating and ensuring on either the purchaser or vendor (but spell it out explicitly.) (Comment by John Kocur)</p>

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Specification Section	Type	Comment	Suggested Change
Appendix H	Technical	I am not sure of the need of Appendix H. This information is covered in detail in 684. However, H.1.1 states that AF<5 are insensitive to unbalance. (Comment by John Kocur)	I would change that to <2.5 to be consistent. Also, the paragraph states that a high amplification factor and defines this as >>10. I would recommend a change to state that high amplification factors (>10)... Remove one of the ">" symbols. AF's of 15 or 18 can be construed as high for certain equipment. Is this >>10? I believe that >>10 refers to numbers in excess of 30, 40 etc.. (Comment by John Kocur)
2.4.6.2.4	Technical	2.4.6.2.4 (Not sure what they are asking of 684? What Clarity are they referring to? Wording from 617 or 612 could help with this.) There is no vibration limit imposed on the analysis. With no limit, why specify an unbalance amount? (Comment by John Kocur)	I would recommend similar language to API 617. See following comments: Modify 2.4.6.2.4 ...static load on the adjacent bearing Figure 2-1 shows the typical mode shapes and indicates the location and definition of U for each of the shapes. The magnitude of the unbalances shall be 2 times the value of U as calculated by Equations 2 and 3. Add 2.4.6.2.6.1 For each unbalance case analyzed, the rotor vibration shall not exceed limits as defined in 4.3.3. (Comment by John Kocur)

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77056 Paul Hamer

Chevron Energy & Technology Company

Specification Section

Type

Comment

Suggested Change

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whole document

Technical

See submitted Word document on 24 Aug 2007

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8/27/2007

77056 Paul Hamer

Chevron Energy & Technology Company

<u>Specification Section</u>	<u>Type</u>	<u>Comment</u>	<u>Suggested Change</u>
Various	Technical	<p>1.6, under "CENELEC" The EN core plate documents that are listed, EN10126 and EN 10165 are both listed as "Superseded and Withdrawn."</p> <p>The correct reference should be IEC 60404 which covers magnetic steels. IEC 60404-1-1 is titled "Classification - Surface insulations of electrical steel sheet, strip and laminations." It uses similar designations and descriptions as ASTM 345</p> <p>2.1.8 - Shouldn't the last sentence in parentheses be a "Note?"</p> <p>Note: See IEEE 1349, IEEE 303, and IEC 60079 for additional guidance and information on application of motors and accessories in hazardous locations</p> <p>Tables 2-2 a and b: "KW" should be "kW"</p> <p>2.4.1.1.f The added "Reference IEEE 1349." should be added as an informational note and not as part of the required text. Change to: "Note: See IEEE Std 1349 for information."</p> <p>2.4.10.7 - change references to IEC 60404-1-1, as above</p> <p>3.1.1 - "NEMA MG 1, Part 21" should be the reference. Are we satisfied with the "L" dimension for the 2005 NEC requirement for the use of shielded cables at 4 kV or 4.16 kV and termination of these cables?</p> <p>Figure 4.1B - The curve and limits would be more clearly represented if there were 0.1 mil log scale calibrations between 1.0 and 2.0 mils - perhaps truncate the curve's vertical scale below 0.5 mils and above 3 mils to permit</p>	

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Chevron Energy & Technology Company

Specification Section

Type

Comment

Suggested Change

this. I additionally suggest that the filtered (one-times running speed) vibration limits also be shown as a curve on Figure 4.1. The resolution document indicated "Adopted suggestion to make figures more readable," but this has not been done in the draft.

4.3.4.2.1.c - Where is the accepted wording on voids? I disagree with accepting this particular wording, because "visible" is too subjective. Does the TG mean "visible by the naked eye" or "visible without magnification?"

Te accepted text below has not been added to the draft:

6.2.2.2.3 For both motors and generators: Information shall be supplied to facilitate a preliminary power system short-circuit analysis by the user. The required machine parameters include  $X_{dv}$  (rated voltage subtransient reactance),  $X_{2v}$  (rated voltage negative-sequence reactance),  $T_{a3}$  (rated voltage armature time constant (seconds)), rated MVA, and rated terminal voltage.

Note: IEEE Std C37.010, Table 8, footnote "a," describes the use of the above information to determine the effective resistance to be used for the X/R of the machine during short circuit calculations.

(Blanks for this information may need to be included on the Data Sheet as "?" proposal items)

Data sheets:

A very careful proofread is required for all data sheet references to the Standard's text and Appendices (cross check all paragraph numbers), and to make sure all "When Specified" items have been included correctly.

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158222 Royce King

ConocoPhillips

Specification Section	Type	Comment	Suggested Change
2.3.1.3	Editorial	I suggest that the word multiturn be modified	Change to multi-turn
2.4.11.2 t	Editorial	May was changed to are in the text and now reads "...two systems are not be identical."	Delete the "be" to read "...two systems are not identical."
Various	Technical	<p>Comments from previous ballot and resolutions of the comments were recorded in the "API Ballot Comments and Resolution" forms. There are a number of Comment Resolutions that indicated action would be taken and the final review draft has not been changed.</p> <p>Some examples are as follows:</p> <p>Royce King, Clause 2.4.8.6, Page 14 of 40            Jim Kay, Clause 2.5.3.8, Page 14            Jim Kay, Clause 2.5.3.9, Page 14            Jim Kay, Clause 2.5.3.12, Page 15            Jim Kay, Clause 3.1.1, Page 15            Louis Barrios, Clause 3.1.4, Page 15            Lorraine Padden, Clause 3.4.2, Page 16            Jim Kay, Clause 3.4.2/3, Page 17            Jim Kay, Clause 3.6.4.2, Page 17            Gabe D'Alleva, Clause 4.3.1.4, Page 17            Gabe D'Alleva, Clause 4.3.4.2.1 c), Page 18            Paul Hamer, Clause 6.2.2.2, Page 21, to add 6.2.2.2.3</p>	Review the Comment Resolution list and make the changes that indicated that would be accepted or acted upon and have not yet been modified in the current text.
Appendix D	Editorial	The first page of the Appendix D reads "Appendix D - Motor Data Sheet Guide". However the header on the sheets indicates in words that it is Appendix E - Synchronous Motor Data Sheet Guide.	Modify the header to correctly identify that this pages are Appendix D
Appendix E	Editorial	Appendix E does not have a header on each page.	Add a header to the pages of Appendix E to read in similar format to Appendix D



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Specification Section	Type	Comment	Suggested Change
Appendix D	Editorial	<p>Page 9, Line 24 should be Line 25</p> <p>Page 14, Main Conduit Box should read Main Terminal Box</p> <p>Page 16, Line 42, Volts, Phase and kW should read Volts, Phase and Hz</p> <p>Page 16, Line 43 should be Line 43 and 44</p> <p>Page 20, Line 365 to 44 should be Line 36 to 44</p> <p>Page 20, Line 43 I believe should be Line 44</p> <p>Page 25, Line 6 should be Line 3</p> <p>Page 31, Lines 23, 24, 25 and 26 should all be decreased by one number</p>	Make change to agree with Data Sheet
US Customary Units Data Sheet	Editorial	Page 4, Other Detector and Thermocouples on lines 18 and 19 are user selection items and should have indicators in front of them	Add a circle bullet in from of the two selectable items
US Customary Units Data Sheet	Editorial	Pages 10 and 11 have square boxes for selection boxes. Square Boxes are Manufacturer with Proposal boxes. However these are purchaser selection items and not manufacturer determined items. Changes need to be made.	Replace all the square boxes with round circular bullets.
US Customary Units Data Sheet	Editorial	It is difficult to know how to change the data sheet "indicators" be they circles, squares or triangles from white to black in order to complete the data sheets electronically. The Excel Code is not adequate to help the user understand what needs to be done to change the state of the "indicators".	Add a page 0 to the data sheets with instructions on how to change the state of the "indicators"

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