

**Comment #15 – 10/31/16 – 9:03 a.m.**

On behalf of Lincoln Financial we are submitting the following comments on the Modeling exposure draft.

Thank you.

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Section 1.2, 3.1 – These sections refer to whether model results are “heavily” relied upon to define applicability of this standard.

- Is this a common term in ASOPs or defined elsewhere?
- Is “materially” a better term?
- If heavily is used, the practice notes should address how to assess if a model is heavily relied upon.

2.4 Implementation: An executable form of the model

We had some discussion around this term, but in reviewing how this is used are not sure how to improve it. We talked about adding creation or validation of the model, but section 1.1 has a longer list of steps that may make it redundant to add in this definition.

2.12 Simple model – Concerns raised were:

- Focus on the results of the model and not the degree of complexity in the model inputs, formulas, processing or interaction of variables.
- When are model results are transparent?
- To what degree are model results predictable without a model run – is this satisfied if the actuary knows the magnitude and direction of a change to model or is it only satisfied if the exact result is known without a model run?
- Examples would be helpful

3.2 Models developed by others – Doesn't address what to do if sufficient information about the model is not available, other than make practical efforts to comply with this standard.

- Consider adding: If the actuary does not have enough information about the model to comply with applicable sections of this standard, then the actuary should either not use the model or should disclose the concerns as described in Section 3.6.1 and 3.6.2.

3.4.5 Model Structure c) whether deterministic or stochastic results, or both, are appropriate

- This was felt to be too specific and narrow. Consider: whether the form of the model is appropriate, such as deterministic, stochastic, predictive, etc

3.5 Model Risk – concerns raised that over-fitting of models to data is not addressed. Add to section 3.5 – any suggestions for specific language?

3.6 & 4.2 Inconsistencies in use of “should” and “should consider”

- 3.6.1: “Should” explain “the extent to which a model fails to fulfill intended purpose” and “other known material limitations”
- 4.2: Actuarial report “should” disclose “reasons that prevent the model from meeting the intended purpose... In this situation the actuary should disclose the intended purpose of the model”.
- 3.6.2: In actuarial reports... the actuary “should consider” including... a) the intended purpose...
- Why is failure to meet intended purpose repeated in 4.2, but other known material limitations is not? Both “should” be explained per 3.6.1.
- We felt 3.6.2 should be modified to be “should”, rather than “should consider”, so that the intended purpose is always explained. “if applicable” could be added as in 3.6.1.