## Comment #25 - 10/31/16 - 7:13 p.m.

Pinnacle Actuarial Resources, Inc. is pleased to have the opportunity to provide the following comments in regards to the Third Exposure Draft of the Proposed Actuarial Standard of Practice— Modeling.

1. Does the proposed standard provide sufficient and appropriate guidance to actuaries working with models? If not, what suggestions do you recommend for improving the guidance?

The ASOP is a general guidance rather than a specific guidance but this may be due to the nature of modeling relative to ratemaking or reserving. It does seem to cover the basic standards that apply to actuarial work.

2. Does the proposed standard provide sufficient and appropriate guidance to actuaries working with all types of models, including financial projection models, predictive models, and statistical models?

It provides general guidance for all types of models.

3. The scope of the proposed ASOP excludes "simple" models, which are defined in section 2.13. Is this definition appropriate and sufficiently clear?

The definition in section 2.12 is suitable.

4. Section 3.2 requires the actuary to make practical efforts to comply with applicable sections of this standard with respect to models designed or built by someone else, such as a vendor or a colleague, when the actuary has a limited ability to obtain information about the model or to understand the underlying workings of the model. Is this guidance appropriate and clear?

As a standalone section, this provides minimal guidance about how an actuary should resolve the issue of limited availability or understanding. It is not clear what an actuary is to do if he/she cannot come to a reasonable understanding of the model. Is it OK to use the model subject to disclaimers in the report? In other words, how far must the practicing actuary go to get such an understanding? If he/she cannot get there, can they still use the results of the model, provided they "continue to make a reasonable attempt to have a basic understanding ...?

5. Does any guidance in this exposure draft conflict with the guidance in the proposed working draft of ASOP No. 38, Catastrophe Modeling (for All Practice Areas)?

There are some minor variations in definitions between this exposure draft and the September 2013 ASOP 38 exposure draft. There is no mention of which document should supersede in the event of conflicting statements.

## Comments regarding definitions

Section 2.3 Granularity: Granularity in predictive modeling generally refers to the level of detail
of the data that is used to develop models

- 2.4 Implementation: while we understand the use of the term implementation here, in the area of predictive analytics it generally refers to the introduction of a new or revised business process based on the model results
- 2.7 Model: The last sentence does seems to describe the model development process, not a model evolving. Also, the distinction between implementation model runs as defined in the proposed ASOP is not clear. They both seem to refer to running the process the transforms inputs into outputs. Related to predictive models, the following sentence would be more appropriate "The model development process includes: (1) a specification phase, (2) a production phase, that consists of one or more model runs, and (3) a model out evaluation phase."
- 2.11 Parameters: in predictive modeling, parameters are the resulting numerical outputs from the models, not inputs

The comments above are the collected comments of the consultants employed or affiliated with Pinnacle Actuarial Resources, Inc. If you have any questions regarding the above, please contact Laura Maxwell@pinnacleactuaries.com.

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