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May 13, 2019

Actuarial Standards Board (ASB)  
1850 M Street NW, Suite 300  
Washington, DC 20036

Sent via email: [comments@actuary.org](mailto:comments@actuary.org)

Re: ASB Comments—Comments on Fourth Exposure Draft of the Modeling ASOP

Thank you for the opportunity to provide comments on the proposed actuarial standard of practice (ASOP), *Modeling*. The American Academy of Actuaries<sup>1</sup> Casualty Practice Council (CPC) has reviewed the document, concurs that a modeling ASOP is appropriate, and offers the comments below.

*Overall comments*

While the definition of a model seems clear, when we look at our various work products, there appears to be judgment in how to define a distinct model. At times a process rather than a specific component appears to meet the definition of a model. At other times a specific component of an analysis is clearly a model. This leads us to recommend further definition of what is a model and how granularly that definition will apply. Later in this letter we have more specific comments about the wording of the definition of a model.

New terminology used within this ASOP may get in the way of actuaries accepting and applying this ASOP in the intended circumstances. That is also a theme of our comments in this letter.

*Specific section comments*

Sections 1.1 and 1.2 describe an actuary as using a model but not relying on the model. The word “rely” is used when referring to the intended user placing reliance on the model output and when the actuary relies (Section 3.3) on models developed by others or experts. We find this use of the

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<sup>1</sup> The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policy makers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

word “rely” and “reliance” is likely deliberate by the drafters, but rather subtle for the users of the ASOP. We recommend the drafters point this out, as some users of models consider the use of a model as reliance even when it is the user’s own model.

With respect to Sections 1.2 and 2.7, we have the following comments or questions pertaining to the definition of a model in conjunction with the scope of the ASOP:

- a. When using a software package that acts as an engine for calculations of several methodologies used to develop an actuarial finding, is the software package considered “a model developed by others in which the actuary is responsible for the model output,” and therefore within scope of this ASOP? If yes, is it the intent of Section 3.5.4, which describes the use of governance and controls to mitigate model risk, to enable reliance on the software developer’s testing of the product related to the actual working of the model? Can actuaries rely on the developer’s testing if we do not know how they tested it, since this information may not be available for commercially available software?
- b. For example, Microsoft Excel would appear to potentially be a process component of a model. Is the actuary expected to disclose that Excel is a model and the actuary has relied on the assumption that it can be taken as a given? It is reasonable to assume that it works as intended and can be used and output relied on without further validation. What about a less well-known, perhaps newly developed software package? Clarifying what the actuary’s responsibility should be in using third party or vendor software as part of a model would be helpful.
- c. Within ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, Section 3.6.1, there is a description that when deriving an unpaid claims estimate, the actuary should consider using multiple methods. At what level is the accumulation of the various components of an unpaid claims estimate process a model? When we read the exposure draft, we could not determine how much additional work and/or disclosure would be required when compared to what is already done.

Within Section 2.6 of the proposed ASOP, the definition of the intended user is too broad as it describes an actuary as “able” to rely rather than an actuary “likely” or “expected.” In addition, this definition points to the use of the actuarial findings, implying the model output rather than the model itself.

The phrase “model run” within Section 2.9 is new terminology for those accustomed to using deterministic models. The definition recognizes that a model run may be at varying levels of granularity. The issue may potentially be reconciling the language of deterministic models with the language of stochastic models. A deterministic model generates scenarios by applying several assumption/parameter sets. A stochastic model may be run several separate times with different assumption/parameter sets, with each separate run of the model being called a model run. We recommend calling the collection of all simulations as one model run for a stochastic model. The definition of a model run would be clearer.

Within Section 2.12, consider differentiating between a parameter used as an input to a model and that used as output from a model (e.g., “input parameter” and “output parameter”).

The second sentence of Section 3.1.2 states “When using the model, the actuary should make reasonable efforts to ensure that any revisions to the input and formulas ... are consistent with the intended purpose.” The initial input as well as revisions to input need to be consistent with the intended purpose. Therefore, we propose taking out the words “any revisions to.”

We recommend that the term “margin” as used in Section 3.1.6.b. be defined within this ASOP. While the response within this exposure draft regarding prior comments points to definitions in other ASOPs for definition of the term “margin,” unless the term is defined in ASOP No. 1, we would expect the definitions of terms to be self-contained within each ASOP.

Section 3.1.6.c. is not clear on what is meant by a range of assumptions and parameters. Perhaps the drafters intended the phrase “range of assumptions and parameters” to mean a variety of assumptions and parameters. An alternative set of words could be, “The actuary may consider using several different assumptions and parameters...” Otherwise, we start thinking that the phrase “range of assumptions and parameters” may mean a range of assumptions and parameters is a series of points or a continuous set of values. We do acknowledge that a lack of specificity may be necessitated by the underlying uncertainties and variety of bases for the actuarial judgments needed. The terminology “range of assumptions and parameters” may also imply expectations on the impact on the output as being a series of points or a continuous set of values.

Section 3.1.6.f. focuses on how to make a determination on the reasonability of a model in the aggregate as well as the assumptions and parameters in the aggregate. In practice we would examine the reasonability of the output of the model in making such a determination. Please consider articulating the importance of considering the reasonability of the output in making the determination of the reasonability of the model in the aggregate as well as the reasonability of the parameters and assumptions in the aggregate. Both the input assumptions and parameters and output should be assessed for reasonableness. As currently worded, the output of the model is not assessed for reasonability.

The CPC appreciates this opportunity to provide comments to the ASB. We hope these observations are helpful, and we welcome further discussion. If you have any questions about our comments, please contact Marc Rosenberg, the Academy’s senior casualty policy analyst, at [rosenberg@actuary.org](mailto:rosenberg@actuary.org) or 202-785-7865.

Sincerely,

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Vice President, Casualty  
American Academy of Actuaries