

## **SECOND EXPOSURE DRAFT—March 2006**

### **Appendix 2**

#### **Comments on the First Exposure Draft and Responses**

The first exposure draft of this proposed revision of ASOP No. 38, then titled *Using Models Outside the Actuary's Area of Expertise (All Practice Areas)*, was issued in October 2003 with a comment deadline of March 31, 2004. Twenty-six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force to Revise ASOP No. 38 carefully considered all comments received, and the General Committee and the ASB reviewed (and modified, where appropriate) the proposed changes to the proposed ASOP. Summarized below are the significant issues and questions contained in the comment letters and the responses to each. The term “reviewers” includes the task force, the General Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the first exposure draft.

<b>GENERAL COMMENTS</b>	
Comment	One commentator believed that the proposed standard was burdensome for actuaries in small firms.
Response	As noted in the transmittal letter memorandum, the reviewers believed that some commentators read the first exposure draft to require more than was intended. Extensive revisions have been made in an effort to address this. It is also pertinent that the proposed standard leaves it up to the discretion of the particular actuary as to whether the model being used is outside the actuary's expertise, regardless of the size of the firm. Also, the quality of the actuary's work product should not depend on the size of the firm.
Comment	One commentator believed that the actuary should be able to rely on a statement from an expert that appropriate standards were followed in developing or recommending the model and that it would be redundant and impractical to require the actuary to perform these tasks again. The commentator noted that this is similar to the way in which auditors rely on outside experts such as actuaries.
Response	The reviewers agreed that the role of experts concerning the model is important. Current sections 3.3 and 3.5(b) provide guidance to the actuary when considering whether the actuary can use a model that has been previously reviewed by experts.
Comment	Several commentators suggested slight changes to the wording in various sections of the proposed standard.
Response	The reviewers implemented such suggestions if they enhanced clarity and did not alter the intent of the section.

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<b>SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE</b>	
<b>Section 1.1, Purpose</b>	
Comment	One commentator questioned whether it would be outside the scope of the proposed standard if the actuary could have programmed the software from scratch, even though he or she did not.
Response	The reviewers were mindful of the situation. The proposed standard applies to areas that are outside the actuary's expertise. Although the fact that the actuary could have programmed the software from scratch is a potent argument that the model is within the actuary's expertise, the proposed standard leaves it to the actuary to make the final determination as to whether the model is within the actuary's expertise and, hence, whether the proposed standard applies.
<b>Section 1.2, Scope</b>	
Comment	A few commentators believed that it is not possible to set one standard that will apply to the use of every model an actuary in any discipline might use, and hence the scope should not be expanded beyond property/casualty. The commentators referred to section 3.1.2 of the <i>Introduction to the Actuarial Standards of Practice</i> , where it states that, in most instances, ASOPs are written to reflect generally accepted practice. They asserted that the proposed standard presupposes generally accepted practice for all models in all actuarial areas of practice, which does not appear to be the case.
Response	The reviewers agreed that there is no generally accepted practice over all practice areas when using models outside the actuary's expertise. The reviewers acknowledge that, in most instances, ASOPs are written to reflect generally accepted practice. However, the use of output from models is an evolving area of actuarial theory and practice. ASOPs are written in certain instances in a new practice area or where there appears the need to more clearly delineate or elevate the minimum acceptable level of practice where existing guidance is insufficient to meet the evolving needs of the profession. In fact, section 3.1.3 of the <i>Introduction</i> addresses this issue: "In a very few instances, the ASB may determine that the minimum acceptable level of practice should be more clearly delineated or elevated. In these instances, the ASB seeks to define an appropriate level of practice, recognizing that the adoption of an ASOP and its subsequent use by practitioners and enforcement by the U.S. actuarial organizations will have the effect of rendering practices described in the ASOP as "generally accepted."
Comment	A group of commentators noted that other ASOPs, such as No. 7, <i>Analysis of Life, Health, or Property/Casualty Insurer Cash Flows</i> , and No. 41, <i>Actuarial Communications</i> , already require disclosure of the actuary's reliance on others and as such the proposed ASOP is not necessary.
Response	ASOP Nos. 7 and 41 do apply if there is reliance on others, which includes reliance on models that fall within the actuary's expertise. Models used in practice have evolved to the point of being very complex tools that can significantly impact the practicing actuary's conclusions. When the actuary is using the expertise of others represented in these models, and these models are outside the actuary's expertise, the reviewers agreed that the existing disclosure requirements referred to by the commentators generally address the actuary's responsibility. The reviewers revised section 4.1 to eliminate items (d) and (e) because the reviewers believed they are already required by ASOP No. 41.

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Comment	A group of commentators suggested that reviewing a model on terrorism catastrophe losses would be onerous and difficult.
Response	This is exactly the type of model for which the proposed standard was written. The same complaint was applied to catastrophe modeling for natural events (for example, hurricanes and earthquakes). Today, property/casualty actuaries have a better understanding of these models, and improvements have been made as a result of further examination. Also, modelers have provided materials and presentations to help actuaries better understand these models.
Comment	One commentator mentioned the possibility of a conflict between this proposed standard and Precept 2 of the <i>Code of Professional Conduct</i> . Precept 2 states, “An Actuary shall perform Actuarial Services only when the Actuary is qualified to do so on the basis of...education and experience....” Under Precept 2 the actuary can perform actuarial services only when the actuary has the requisite level of education and experience, while the proposed standard would seem to permit an actuary to practice on matters outside the actuary’s education, training, and experience.
Response	This is one of the concerns that the proposed standard is designed to address. The reviewers agreed that there is a potential conflict with Precept 2 if the actuary does not have the requisite expertise concerning the matter. However, the actuarial profession has evolved to the point that a practicing actuary may be called upon, for appropriate reasons, to use a model outside the actuary’s expertise. Therefore, without additional analysis, the actuary may not be satisfied that the model is appropriate for use in the particular circumstances. This proposed standard is intended to provide guidance to actuaries under these circumstances.
Comment	One commentator supported the idea of a standard that allows the actuary to rely, when appropriate, on nonactuarial models built by others but believed that it might be appropriate to give guidance on use of models that are “actuarial” but not directly within the actuary’s primary experience.
Response	The proposed standard applies to both actuarial and nonactuarial models that are outside the actuary’s expertise. The scope was revised to make it explicit that the proposed ASOP applies to actuarial models.
Comment	Some commentators asserted that the proposed ASOP does not adequately address the issues faced by life actuaries who often deal with models from other financial fields. For life actuaries, the delineation between what should be within a life actuary’s expertise and what is outside the actuary’s expertise is not always as clear. The commentators suggested that a separate ASOP be developed for life actuaries.
Response	The reviewers agreed with the observation that what is within and outside an actuary’s expertise is not always immediately clear for each actuary. It will vary from actuary to actuary. However, it is the responsibility of the actuary to make this determination. This is the very reason why the proposed standard leaves it up to the actuary to define his or her expertise, based on the actuary’s education, training, and experience. The reviewers revised section 1.2 to clarify this. The reviewers also believed that the responsibilities of the actuary in this situation, as outlined in the proposed ASOP, are an appropriate level of practice.
Comment	One commentator, who practices as a life actuary and performs asset adequacy analysis, said it was not clear to him how to implement the standard in his situation. He would need some training or a practice note to ensure that he was following whatever practice is being called for in the ASOP.
Response	The reviewers agreed that, depending on the actuary’s situation, some training or additional study may be desirable. The proposed standard was revised to clarify the actuary’s responsibilities.

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Comment	One commentator asserted that actuaries now use many nonactuarial inputs, such as data, in addition to models and did not see the merit of having an ASOP focus on just models.
Response	When relying on data, actuaries should follow ASOP No. 23, <i>Data Quality</i> . Models, on the other hand, are complex mathematical objects and clients could easily construe the internal logic contained in these models as being within the expertise of the actuary. The proposed standard indicates that the actuary makes the decision as to whether or not the model is within the actuary's expertise. If the actuary answers this question in the negative, the actuary can turn to the proposed standard, which is designed to help the actuary address the question of what to do when confronted with the need to use a model outside the actuary's expertise. The reviewers believe that the actuary has professional responsibilities to the client when using such models and the proposed standard clarifies those responsibilities. No changes were made.
Comment	One commentator, who practices as a life actuary and performs asset adequacy analysis, said that while asset modeling is within his area of expertise, he relies on proprietary asset models built by others in his analysis. However, section 1.2 states that the proposed ASOP does not apply if such models are within the actuary's area of expertise.
Response	The proposed standard states that the actuary has the responsibility for determining his or her own expertise based on the actuary's training, education, and experience. If the actuary has the relevant asset modeling expertise along with any other appropriate modeling expertise, then the standard would not apply to the actuary doing asset adequacy analysis. This would be the case without regard to whether the model was proprietary. No changes were made.
Comment	One commentator suggested that special guidelines should apply to models within the boundaries of actuarial science but where the actuary currently has limited knowledge or expertise in that area. The commentator said that the actuary may undergo additional training so that the proposed standard would not apply.
Response	It was the intention that, if the actuary develops the applicable knowledge through education, training, and experience, then the proposed standard would not apply. Prior to gaining that expertise, the actuary should consider the recommended practices discussed in this proposed ASOP.
Comment	One commentator supported the requirement that the actuary determine his or her expertise based on the actuary's education, training, and experience. However, the commentator believed that the proposed standard should more clearly address areas of expertise within the actuary's primary practice area, perhaps by using examples. Otherwise, the spirit of the proposed standard may be misinterpreted, or not followed, if the proposed standard does not provide some examples.
Response	The proposed standard leaves it to the actuary to define his or her expertise based on the actuary's training, education, and experience. The actuary, it is presumed, will give consideration to his or her particular expertise relative to any particular assignment. The reviewers did consider the possibility of inclusion of examples. However, examples by themselves can lead to problems of interpretation. On balance, the reviewers thought it best not to use examples in this section and that the wording of the statement is appropriate.

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Comment	One commentator suggested that an actuary should be able to rely upon another expert if that expert has a professional designation (for example, by a recognized risk management organization like GARP or PRMIA).
Response	Other professions may have different standards than actuaries. Just because an individual is recognized by another field of practice or organization does not mean that he or she has the same standards of practice to follow. Section 3.7 (now 3.5) was revised to clarify the actuary's responsibilities when collaborating with or using the work of other actuaries or experts.
Comment	A commentator asked whether the proposed standard applied to neural networks or other artificial-intelligence-type models.
Response	The proposed ASOP would apply to such models if the actuary determines they are outside his or her expertise.
Comment	One commentator was concerned about the examples of different models that were subject to the proposed ASOP. The commentator suggested that the listing be eliminated or expanded to include a more complete list.
Response	The reviewers believed that, in this case, a list of examples was appropriate and beneficial. The reviewers did not believe a complete listing would be possible, because actuaries are constantly expanding the types of risks analyzed and quantified. A complete list created today would not be complete tomorrow.
Comment	One commentator questioned whether the goals of the proposed standard were unnecessary and burdensome for areas such as pension modeling. Because pension models have been covered at actuarial meetings and have been included in the syllabus for actuarial exams, the commentator believed that applying the proposed standard would be counterproductive and add extra hurdles.
Response	The changes incorporated in this second exposure draft are intended to eliminate unnecessary work. This is pertinent to the pension area. Also, the proposed standard does not apply to situations in which the actuary uses a model within his or her expertise. If the pension actuary, for example, determines that a model is within his or her expertise, this proposed standard does not apply.
Comment	One commentator questioned what the responsibilities are if a component from one practice area were added to a traditional model used in another practice area.
Response	Again, the reviewers believed that the actuary using the model determines whether the model is outside the actuary's expertise. The reviewers agreed that the actuary using a model with multiple components may, under certain circumstances, conclude a component of the model prepared by another actuary is outside the using actuary's expertise. Section 3.7 (now 3.5) is intended to be of assistance in this situation by providing guidance in appropriately collaborating with or using the work of another actuary.

### **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES**

#### **Section 3.1, Introduction (now Overview)**

Comment	Two commentators believed that "materiality" should be defined or clarified.
Response	Although this reference to materiality was eliminated by the revision of section 3.1, the reviewers added a new section 3.6 to clarify that the degree of model review should be consistent with the relative importance of the model's output to the results of the actuarial work product.

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Comment	One commentator believed that the last sentence should encompass not only the actuary's level of understanding and evaluation of a model, but all of the evaluations and processes described in the proposed standard.
Response	The reviewers, based on their understanding of the comment, were in agreement with it. However, the reviewers believed that the phrase "understanding and evaluating" did indeed embrace all the particular steps mentioned in the proposed standard in reaching such understanding and performing such evaluation. Therefore, no change was made aside from moving that wording into new section 3.6, Relative Importance of the Model Output.
<b>Section 3.2, Appropriate Level of Reliance on Experts (now 3.5(b), Collaborating with or Using the Work of Experts)</b>	
Comment	A number of commentators raised issue with the requirement that an actuary must stay current in areas outside traditional actuarial practice to determine the outside expert's degree of expertise. Many stated that this would require the actuary to become an expert on the models outside their expertise.
Response	The reviewers believed that considerations such as those in what is now section 3.5(b) would be necessary in order for the actuary to determine the appropriate extent to collaborate with or use the work of an expert. The reviewers did revise the wording to turn the list items into examples.
Comment	A number of commentators questioned their duties when working with widely accepted models supplied by a vendor or models that are widely accepted in the industry.
Response	The reviewers clarified what is now section 3.3 regarding the actuary's role with respect to models that have undergone varying levels of prior review and use.
Comment	A number of commentators raised issue with the proposed standard addressing specific version numbers in section 3.2(b) (now section 3.5(b)(1)) with respect to computer simulation programs.
Response	Although the reviewers believed that referring to a specific version number was appropriate because revisions of a model might have significant impact upon the use of the model, the reviewers ultimately removed the reference to a specific version as part of a revision of this section.
<b>Section 3.4, Appropriateness of the Model for the Intended Application (now 3.2, Appropriateness of the Model for the Intended Use)</b>	
Comment	Two commentators believed that sections 3.4 (now 3.2) and 3.6 (now 3.7) covered the same material. It was believed that the proposed standard was duplicative or required a mandatory second review.
Response	The reviewers retained two sections because current section 3.2 provides guidance for when the actuary is considering whether a model is appropriate to use, while current section 3.7 provides guidance for actually using the model and its results.
Comment	One commentator suggested adding a new sentence to the end: "An expert may be relied upon to determine the appropriateness of any changes to the model, any historical data underlying the model, and any developments which might call into question the use of the model as intended."
Response	The reviewers believed that it is the actuary who determines that the model is appropriate for the intended application. Current sections 3.3 and 3.5 provide guidance on collaborating with or using the work of experts regarding those aspects of the model that are outside the actuary's expertise.

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Comment	In section 3.4(a) (now 3.2.2), one commentator suggested deleting “when representing the range of reasonably expected outcomes” so that the suggestion of reviewing historical data would apply to all aspects of applicability, rather than being restricted to the idea that historical ranges of outcomes may not represent best thoughts about applicable model outcomes.
Response	While the reviewers agreed that historical data will not always cover all possible events and believed that the phrase “to the extent that historical data are used” addressed the commentator’s concern, the reviewers revised the wording slightly.
Comment	One commentator suggested inserting the word “current” before “developments” in section 3.4(b) (now 3.2.4) to clarify that the actuary need not acquire knowledge of the whole history of model development in the area of concern.
Response	The reviewers agreed with the proposed change.
<b>Section 3.5.1, User Input (now 3.4.3)</b>	
Comment	One commentator suggested that the proposed standard should distinguish between data and other input items such as assumptions and should separately address the choice of input parameters and the use of data.
Response	The reviewers agreed and revised the language.
<b>Section 3.6, Appropriate Use of the Model and Its Results (now 3.7)</b>	
Comment	One commentator suggested replacing “analysis” with “steps.”
Response	The reviewers changed the wording to reflect the revisions in the earlier sections of the proposed standard. The wording now refers to “considerations” rather than “analysis.”
<b>Section 3.7, Reliance on Model Evaluation by Another Actuary (now 3.5(a), Collaborating with or Using the Work of Actuaries Who Are Not Experts)</b>	
Comment	Two commentators questioned the wording and whether it is acceptable for an actuary to collaborate with or use the work of another actuary without having to take “reasonable steps to confirm that the other actuary’s evaluation was performed in accordance with the standard.”
Response	The reviewers believed that this section provided appropriate guidance because models may be used for different purposes and under various circumstances by various actuaries. The actuary being relied upon may provide information that will help the actuary satisfy the proposed ASOP. Additional review of the model may be required to satisfy the needs of the actuary. The wording was, however, revised for clarification without any intended change in meaning. Current section 3.5 provides additional guidance regarding reliance on other actuaries.
<b>Section 3.8, Documentation</b>	
Comment	One commentator suggested eliminating the first sentence because it was too inflexible and could be used by others against the profession.
Response	The reviewers believed this was an appropriate requirement.
Comment	One commentator found the last sentence of what is now the first paragraph unclear.
Response	The last sentence was added for emphasis. A vendor-supplied model should have the same level of validation and documentation as another model. The reviewers considered the sentence again in view of the comment and believed it was clear.

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Comment	One commentator questioned how much documentation is needed for each project.
Response	The reviewers believed the actuary may rely on prior documentation to the extent prior documentation is relevant to the current project. If the intended use is different from the prior project, additional documentation may be required.
<b>APPENDIX (now Appendix 1)</b>	
Comment	One commentator believed that the list of model types should either exclude certain language or contain additional language to represent that the actuary may have expertise in some of the areas, such as life actuaries using a “black box” model.
Response	The proposed standard provides guidance for actuaries that use models that incorporate knowledge outside the actuary’s expertise. The guidance applies to any components of the model outside the actuary’s expertise that may have a material impact on the actuary’s work product. Advice for collaborating with or using the work of experts is provided with regard to the components outside the actuary’s expertise. The background section of the appendix makes it clear that the models provided as examples “may contain components that are outside the expertise of many of the actuaries who use them.” If a model contains no material elements outside the actuary’s expertise, then the proposed standard does not apply. The proposed standard allows the actuary to determine which, if any, components of the model are outside the actuary’s expertise and, therefore, within its scope. Additionally, the list of examples is not intended to be all-inclusive.