Actuarial Standards Board

● EXPOSURE DRAFT ●

Proposed Revision of
Actuarial Standard of
Practice No. 4

Measuring Pension Obligations and Determining Pension Plan Costs or Contributions

Comment Deadline:
May 31, 2012

Developed by the
Pension Committee of the
Actuarial Standards Board

Approved for Exposure by the
Actuarial Standards Board
January 2012

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TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Measuring Pension Obligations and Determining Pension Plan Costs or Contributions

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Revision of Actuarial Standard of Practice (ASOP) No. 4

This document contains an exposure draft of proposed revisions to ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions.*

Please review this exposure draft and give the ASB the benefit of your comments and suggestions. Each written response and each response sent by e-mail to the address below will be acknowledged, and all responses will receive appropriate consideration by the drafting committee in preparing the final document for approval by the ASB.

The ASB accepts comments by either electronic or conventional mail. The preferred form is e-mail, as it eases the task of grouping comments by section. However, please feel free to use either form. If you wish to use e-mail, please send a message to **comments@actuary.org**. You may include your comments either in the body of the message or as an attachment prepared in any commonly used word processing format. **Please do not password protect any attachments**. Include the phrase "ASB COMMENTS" in the subject line of your message. Please note: Any message not containing this exact phrase in the subject line will be deleted by our system's spam filter. Comments will be posted in the order that they are received. **Comments received after the deadline will not be posted**.

If you wish to use conventional mail, please send comments to the following address:

ASOP No. 4 Revision
Actuarial Standards Board
1850 M Street, NW, Suite 300
Washington, DC 20036

The ASB posts all signed comments received to its website to encourage transparency and dialogue. Unsigned or anonymous comments will not be considered by the ASB nor posted to the website. The comments will not be edited, amended, or truncated in any way. Comments will be posted in the order that they are received. Comments will be removed when final action on a proposed standard is taken. The ASB website is a public website and all comments will be available to the general public. The ASB disclaims any responsibility for the content of the comments, which are solely the responsibility of those who submit them.

Deadline for receipt of responses in the ASB office: **May 31, 2012**

Background

The ASB provides coordinated guidance for measuring pension and retiree group benefit obligations through the series of ASOPs listed below.

1. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*;

2. ASOP No. 6, *Measuring Retiree Group Benefit Obligations*;

3. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;

4. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*; and

5. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

ASOP No. 4 is considered the umbrella standard for pension obligation measurements. If ASOP No. 4 and another standard conflict, ASOP No. 4 will govern.

The Pension Committee and the Retiree Group Benefits Subcommittee are in the process of reviewing and, in many cases, revising these standards. Additionally, the Pension Committee is drafting an entirely new standard on pension risk that will provide guidance on the assessment and disclosure of such risk. The Pension Committee anticipates that the proposed standard on risk will be ready for comment in 2012.

Some commentators stated that having all pension and retiree group benefit obligations guidance in one standard would be preferable to having guidance in several different standards. While the Pension Committee feels that the idea of a consolidated standard is worth investigating, the issues currently under review need to be resolved before consolidation can be considered.

In September 2010, the ASB issued a revised ASOP No. 35, which was revised again in May 2011 for deviation language. There are sections of ASOP No. 35 that need to be consistent with ASOP No. 27. Given that ASOP No. 27 is being revised, the ASB expects further revisions to ASOP No. 35 once a new version of ASOP No. 27 is finalized.

In January 2011, the ASB issued an exposure draft of ASOP No. 27:
http://www.actuarialstandardsboard.org/pdf/asops/asop27revision_exposure_2011_updated.pdf
Twenty comment letters were received and reviewed:
http://www.actuarialstandardsboard.org/comments/asop27_comments.asp
The Pension Committee found the comment letters to be thoughtful and helpful; the ASB thanks all those who took the time to comment. The ASB is issuing a second exposure draft of ASOP No. 27 concurrently with this ASOP No. 4 exposure draft. Readers are encouraged to read the background section of the first and second ASOP No. 27 exposure drafts for additional information.

In January 2011, the Pension Committee issued a discussion draft of ASOP No. 4 (http://www.actuarialstandardsboard.org/pdf/discussions/asop4_discussiondraft_2011_updated.pdf) and requested comments from interested parties. As stated in the transmittal memo of the discussion draft, comments on the discussion draft are not published, nor is the Pension Committee required to respond formally to comments received. Several readers did provide comments. The Pension Committee found the comment letters to be thoughtful and helpful and thanks all those who took the time to comment.

Key Proposed Changes to ASOP No. 4

Some of the proposed changes to ASOP No. 4 introduce new concepts while others are refinements to concepts currently in the standard.

Section Order

Some sections of the current standard have been rearranged in the proposed standard to improve the flow of the document or to group similar issues together. For example, section 3.16 of the current standard (Adjustment of Prior Measurement) has been moved to section 3.4.3 of this proposed standard that discusses measurement date issues.

Definition of Funded Status, Fully Funded

Section 2 has been expanded to include definitions of Funded Status and Fully Funded. The Pension Committee is concerned that non-actuarial readers may misinterpret these terms, especially the term "fully funded," or any term conveying a similar message. Section 4.1(p) of the exposure draft directs the actuary to disclose the following items when asserting that the plan is fully funded:

1. whether the plan's market value of assets equals or exceeds the estimated cost to settle the benefit obligations;

2. that fully funded is a temporary measure at a particular point in time;

3. whether there is significant risk that the fully funded plan could cease to be fully funded; and

4. that additional contributions to the plan may be required if the plan is fully funded relative to the present value of accrued benefits but not relative to the present value of projected benefits.

Sections 4.1(n) and 4.1(o) contain new disclosure requirements related to a plan's funded status. Under the exposure draft, if a funded status based on an actuarial value of assets is disclosed, it must be accompanied by the disclosure of a funded status using a market value of assets. Additionally, if a disclosed funded status is based on a spread gain actuarial cost method, the actuary must also disclose the funded status using an immediate gain actuarial cost method.

Definition of Immediate Gain and Spread Gain Actuarial Cost Methods

Section 2 has been expanded to include definitions of immediate gain and spread gain actuarial cost methods. These terms are used in conjunction with requirements for plan funded status disclosure in section 4.1(o).

Expanded Definition of Cost or Contribution Allocation Procedure and Disclosure of Rationale for Changes

Section 3.13 of the exposure draft expands the definition of a cost or contribution allocation procedure to include the asset valuation method. The result is a definition of cost or contribution allocation procedure that includes the actuarial cost method, the asset valuation method, and the amortization method.

The exposure draft introduces new language requiring the actuary to disclose any change in a cost or contribution allocation procedure in accordance with revised section 4.1(r). Section 4.1(m) of the existing standard requires disclosure of a description of known changes in assumptions and methods. The revised language in the exposure draft adds that for assumption and method changes that are not prescribed, the actuary should include an explanation of the information and analysis that led to the change.

The revised language in section 4.1(r) also requires the actuary to disclose the reason for any change in cost or contribution allocation procedure (whether or not prescribed). Section 4.1(r) clarifies that changes to a cost or contribution allocation procedure include resetting the actuarial asset value.

The Pension Committee believes that these requirements will improve the communication of important information to users of the actuary’s work product.

Liability: Economic, Market, or Otherwise

The word “liability” has created challenges for actuarial communications for decades and continues to do so today. The word is used by several different professions (for example, actuaries, accountants, economists, lawyers, bankers, etc.), often with a slightly different technical meaning. The word also has meaning (technical or otherwise) to the public at large, which includes many users of actuarial work products. When actuaries calculate and disclose an actuarial liability, many users interpret that number in accordance with their view of what a liability represents, rather than what the actuarial disclosure indicates it represents. The profession has been aware of this dilemma for a long time and has periodically considered efforts to remove the word from our work, but has never been able to do so. The Pension Committee considered removing the word “liability” from ASOP No. 4, but concluded that the word is so deeply embedded in pension vernacular that attempting to remove it would be impracticable.

The Committee spent considerable time discussing definitions of economic or market value of pension liabilities. Even though there are myriad viewpoints on the calculation and use (or misuse) of economic or market liability, and no consensus on the issue exists in the profession today, the Committee believed that developing a common vocabulary had become necessary for actuarial work to be understood by users. As discussed further in the next section of this memo, section 3.7 of this exposure draft differentiates between two different types of actuarial present values, and identifies Market-Consistent Present Value as belonging to one of these two types. The word “liability” is purposely not included in these terms. The proposed standard does not require the calculation or disclosure of a market-consistent present value.

Types of Actuarial Present Values of Pension Obligations

The proposed standard differentiates between two types of present value measurements. One type of present value uses a discount rate that reflects the expected investment return of the assets supporting the pension plan; readers may recognize this present value as a traditional actuarial measurement. One feature of this type of present value measurement is that the measurement may vary with changes in allocation of plan assets. The other type of present value uses a discount rate that does not take expected pension asset return into account and, as a result, the measurement does not vary with changes in the allocation of plan assets. This second type of measurement reflects certain characteristics of the expected pension cash flows (for example, timing, credit quality) as well as pricing or discount rates in annuity or credit markets; readers may recognize that IRS target liability and projected benefit obligations under US GAAP for single employer plans are examples of present values that do not reflect plan asset allocation.

The proposed standard introduces Market-Consistent Present Value as a term for a present value type that is not based on plan assets. As the term suggests, this present value is consistent with present values of cash flows observable in financial markets. Two of the more critical components of this present value calculation are the discount rate for future payments and the assessment of pension cash flow credit quality (i.e., default risk for the plan benefits). A market-consistent present value uses discount rates that are consistent with those observed in financial markets for cash flows that are similar to pension cash flows in terms of timing, credit quality and payment option. The proposed standard does not specify a discount rate or set of discount rates for market-consistent measurements, leaving that decision to the actuary’s judgment.

For actuaries determining market-consistent present values, the standard provides guidance on the treatment of default risk for certain measurement purposes. For example, if the actuary is determining a solvency measure, the actuary should not reflect default risk whereas the actuary should reflect default risk if the actuary is determining an economic present value.

Section 4.1(i) of the proposed standard contains disclosure requirements for the actuary related to the actuarial present value type included in the actuary's work product. The proposed language requires the actuary to disclose whether the work product uses an asset-based measurement or one that is not based on plan assets. The actuary should further include a general description of the implications of using the chosen actuarial present value type.

Prescribed Assumptions or Methods

The proposed standard revises the definition of prescribed assumption or method (section 2.16 in the current standard, sections 2.19 and 2.20 in the proposed standard). The proposed language intends that prescribed assumptions or methods are defined by either section 2.19 or section 2.20, but not by both. The language is also intended to be sufficient to cover the various governance structures actuaries find in public pension plans.

The reference in the current standard to a prescribed assumption or method selected “by the plan sponsor” has been changed to “by another party” in the proposed standard (see section 3.16 of the proposed standard). The standard was changed so that a prescribed assumption or method selected “by another party” now includes an assumption or method set by a federal, state or local government or governmental entity for a plan that it directly or indirectly sponsors. As a result, such assumptions and methods would be subject to the evaluation and disclosure requirements of sections 3.16 and 4.2 of the standard. This change reflects the Committee's view that there is no conceptual difference between a private plan sponsor selecting a rate for its plan, a state government selecting a rate for its plan, or the federal government selecting a rate for its plan.

Purpose of Measurement

Section 3.3 of the exposure draft introduces language regarding the purpose of pension obligation measurements. The pension ASOPs often state that assumptions or methods should be appropriate for a measurement's purpose (for example, see section 3.3(a) of the current ASOP No. 4). As a result, the Committee has added language in the exposure draft that addresses the purpose of a measurement.

Gain Sharing and Other Valuation Issues

Sections 3.5 and 4.1(d) were expanded to add a requirement that the actuary provide the rationale for excluding any significant plan provisions from the valuation, for example, those provisions including asymmetric characteristics such as benefits that increase based on certain external experience or statistics but don't decrease when such experience or statistics move in the opposite direction.

Section 3.9 of the current ASOP No. 4, which deals with plan provisions that are difficult to measure using deterministic procedures and standard assumptions, has been rewritten as section 3.5.3 in the exposure draft. The proposed standard adds language requiring the actuary to disclose the valuation approach taken for such plan provisions. The list of examples of special plan provisions has been expanded to include benefit provisions tied to an external index but subject to a floor or ceiling.

Assessment of Contribution Allocation Procedure

The proposed language in section 3.13.4 expands on the current requirement for the actuary to assess whether the contribution allocation procedure is consistent with accumulating adequate assets to make benefit payments when due. It requires the actuary to assess the expected cost progression implications of the assumptions and methods selected. The proposed language requires the actuary to disclose if the use of such assumptions and methods would be expected to result in either declining future funded status measures or increasing future contribution requirements.

Assessment of Contributions Set by Contract or Law

The proposed language in section 3.13.5 requires the actuary to assess the expected cost progression of contribution requirements established by a contract or law, such as a fixed cents per hour or percent of pay requirement. Under the proposed language, the actuary is required to disclose if such contributions would be expected to result in declining future funded status measures.

Request for Comments on ASOP No. 4

The ASB is issuing a revised version of ASOP No. 4 as an exposure draft to provide members of actuarial organizations governed by the ASOPs and other interested persons an opportunity to comment.

The Pension Committee would appreciate comments on the proposed changes and would like to draw the readers' attention to the following areas in particular:

1. Is the new language regarding the purpose of the measurement clear, sufficient and appropriate? If not, how should the language be changed?

2. Is the language regarding actuarial present value types clear? Does the language provide actuaries with sufficient freedom to calculate an appropriate present value type? If not, how should the language be changed?

3. Is the disclosure requirement in section 4.1(i) regarding present value measurements clear and appropriate? If not, how can the disclosure language be improved?

4. Is the lack of prescribed assumptions for determining a market-consistent present value a deficiency in the proposed standard? If so, what assumptions would you propose?

5. Are the expanded definitions and disclosures of cost or contribution allocation procedure clear, sufficient, and appropriate? If not, how should they be changed?

6. Are the revised definitions regarding prescribed assumptions and methods, and the resulting disclosure requirements, clear, sufficient, and appropriate? If not, how should they be changed?

7. Are the new definitions regarding funded status, the term fully funded, and the new disclosure requirements, clear, sufficient, and appropriate? If not, how should they be changed?

8. Are the expanded requirements regarding plan provision valuation, including plan provisions that raise special valuation issues, sufficient and appropriate? What additional guidance (or educational material) would be valuable with regard to alternative valuation procedures, such as stochastic modeling, option-pricing techniques, or adjusting assumptions to reflect the asymmetric impact of variations in experience from year to year?

9. Is it appropriate to require the actuary to disclose whether the contribution allocation procedure or the contribution requirements established by contract or law are likely to result in either declining future funded status measures or increasing future contribution requirements? If not, what disclosure responsibility do you feel the actuary has in these scenarios?

The ASB reviewed this draft and voted in January 2012 to approve its exposure.

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.

EXPOSURE DRAFT—January 2012

MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN COSTS OR CONTRIBUTIONS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to measuring pension obligations and determining plan costs or contributions. Throughout this standard, the term plan refers to a defined benefit pension plan. Other actuarial standards of practice address actuarial assumptions and asset valuation methods. This standard addresses broader measurement issues, including cost and contribution allocation procedures. This standard provides guidance for coordinating and integrating all of these elements of an actuarial valuation of a plan.

1.2 Scope—This standard applies to actuaries when performing professional services with respect to the following tasks:

a. measurement of pension obligations. Examples include determinations of funded status, assessments of solvency upon plan termination, market measurements and measurements for use in pricing benefit provisions;

b. assignment of the value of plan obligations to time periods. Examples include contributions, accounting costs, and cost or contribution estimates for potential plan changes;

c. development of a cost allocation procedure used to determine costs for a plan;

d. development of a contribution allocation procedure used to determine contributions for a plan;

e. determination as to the types and levels of benefits supportable by specified cost or contribution levels; and

f. projection of pension obligations, plan costs or contributions, and other related measurements. Examples include cash flow projections and projections of a plan’s funded status.

Throughout this standard, any reference to selecting actuarial assumptions, actuarial cost methods, asset valuation methods, and amortization methods also includes giving advice on selecting actuarial assumptions, actuarial cost methods, asset valuation methods, and amortization methods. In addition, any reference to developing or modifying a cost or contribution allocation procedure includes giving advice on developing or modifying a cost or contribution allocation procedure.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

This standard does not apply to actuaries when performing professional services with respect to individual benefit calculations, individual benefit statement estimates, annuity pricing, nondiscrimination testing, and social insurance programs as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless an ASOP on social insurance explicitly calls for application of this standard).

This standard does not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make contributions to the plan when due.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for any actuarial work product with a measurement date on or after twelve months after adoption by the Actuarial Standards Board (ASB).

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarial Accrued Liability—The portion of the actuarial present value of projected benefits (and expenses, if applicable), as determined under a particular actuarial cost method that is not provided for by future normal costs. Under certain actuarial cost methods, the actuarial accrued liability is dependent upon the actuarial value of assets.

2.2 Actuarial Cost Method—A procedure for allocating the actuarial present value of projected benefits (and expenses, if applicable) to time periods in advance of the time benefit payments are due, usually in the form of a normal cost and an actuarial accrued liability (sometimes referred to as a funding method).

2.3 Actuarial Present Value—The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions with regard to future events, observations of market or other valuation data, or a combination of assumptions and observations.

2.4 Actuarial Present Value of Projected Benefits—The actuarial present value of benefits that are expected to be paid in the future, taking into account the effect of such items as future service, advancement in age, and anticipated future compensation (sometimes referred to as the present value of future benefits).

2.5 Actuarial Valuation—The measurement of relevant pension obligations and, when applicable, the determination of periodic costs or contributions.

2.6 Amortization Method—A method under a contribution or cost allocation procedure for determining the amount, timing, and pattern of recognition of the unfunded actuarial accrued liability.

2.7 Contribution—A potential payment to the plan as determined by the actuary. It may or may not be the amount actually paid by the plan sponsor or other contributing entity.

2.8 Contribution Allocation Procedure—A procedure that uses an actuarial cost method to determine the periodic contribution for a plan. The procedure may produce a single value, such as normal cost plus twenty-year amortization payment of the unfunded actuarial accrued liability, or a range of values, such as the range from the ERISA minimum required contribution to the maximum tax-deductible amount.

2.9 Cost—The portion of plan obligations assigned to a period for purposes other than funding.

2.10 Cost Allocation Procedure—A procedure that uses an actuarial cost method to determine the periodic cost for a plan (for example, the procedure to determine the net periodic pension cost under the pension accounting standards of the Financial Accounting Standards Board).

2.11 Expenses—Administrative or investment expenses borne or expected to be borne by the plan.

2.12 Fully Funded—A phrase that indicates that a particular measure of plan assets equals or exceeds a particular measure of plan liabilities. Any other phrase that conveys a similar message must meet the requirements in this standard for the use of the phrase fully funded. Disclosure requirements for actuarial work products that include this phrase or any phrase that conveys a similar message are in section 4.1(p).

2.13 Funded Status—A comparison of a particular measure of plan assets to a particular measure of plan liabilities. The comparison is often shown as a ratio of the asset measure to the liability measure or as the amount by which the asset measure exceeds or falls short of the liability measure. A plan's funded status can be measured in many different ways and the measurement can easily be misunderstood or misinterpreted. Because of the role that funded status often plays in the conclusions a user derives from the actuary's work product, the actuary should describe what any measure of funded status represents in accordance with sections 4.1(n), 4.1(o), and 4.1(p).

2.14 Immediate Gain Actuarial Cost Method—An actuarial cost method under which actuarial gains and losses are included as part of the unfunded actuarial accrued liability of the pension plan, rather than as part of the normal cost of the plan.

2.15 Measurement Date—The date as of which the values of the pension obligations and, if applicable, assets are determined (sometimes referred to as the valuation date).

2.16 Normal Cost—The portion of the actuarial present value of projected benefits (and expenses, if applicable) that is allocated to a period, typically twelve months, under the actuarial cost method. Under certain actuarial cost methods, the normal cost is dependent upon the actuarial value of assets.

2.17 Participant—An individual who satisfies the requirements for participation in the plan.

2.18 Plan Provisions—The relevant terms of the plan document and any relevant administrative practices known to the actuary.

2.19 Prescribed Assumption or Method Set by Another Party—A specific assumption or method that is selected by another party, to the extent that law, regulation, or accounting standards gives the other party responsibility for selecting such an assumption or method. For this purpose, an assumption or method selected by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is a prescribed assumption or method set by another party.

2.20 Prescribed Assumption or Method Set by Law—A specific assumption or method that is mandated or that is selected from a specified range or set of assumptions or methods that is deemed to be acceptable by applicable law (statutes, regulations, or other legally binding authority). For this purpose, an assumption or method selected by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is not a prescribed assumption or method set by law.

2.21 Spread Gain Actuarial Cost Method—An actuarial cost method under which actuarial gains and losses are included as part of the current and future normal costs of the plan.

Section 3. Analysis of Issues and Recommended Practices

3.1 Overview—Measuring pension obligations and determining plan costs or contributions are processes in which the actuary may be required to make judgments or recommendations on the choice of actuarial assumptions, actuarial cost methods, asset valuation methods, and amortization methods.

The actuary may have the responsibility and authority to select some or all actuarial assumptions, actuarial cost methods, asset valuation methods, and amortization methods. In other circumstances, the actuary may be asked to advise the individuals who have that responsibility and authority. In yet other circumstances, the actuary may perform actuarial calculations using assumptions or methods prescribed by applicable law or selected by another party.

ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, and ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, provide guidance concerning actuarial assumptions. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*, provides guidance concerning asset valuation methods. ASOP No. 4 addresses broader measurement issues including cost or contribution allocation procedures, and provides guidance for coordinating and integrating all of these elements of an actuarial valuation of a pension plan. In the event of a conflict between the guidance provided in ASOP No. 4 and the guidance in any of the aforementioned ASOPs, ASOP No. 4 would govern.

3.2 General Procedures—When measuring pension obligations and determining plan costs or contributions, the actuary should perform the following general procedures:

a. identify the purpose of the measurement (section 3.3);

b. identify the measurement date (section 3.4);

c. identify plan provisions applicable to the measurement and any associated valuation issues (section 3.5);

d. gather data necessary for the measurement (section 3.6);

e. determine relevant actuarial present value types (section 3.7);

f. select actuarial assumptions pertinent to the measurement, if applicable (section 3.8);

g. select an asset valuation method, if applicable (section 3.9);

h. consider how to measure accrued or vested benefits, if applicable (section 3.10);

i. consider the relationship between procedures used for measuring assets and obligations (section 3.11);

j. select an actuarial cost method, if applicable (section 3.12);

k. select a cost or contribution allocation procedure, if applicable (section 3.13);

l. assess the overall implications of the contribution allocation procedure or contributions set by contract or law, if applicable (section 3.13);

m. consider the use of approximations and estimates (section 3.14);

n. consider sources of significant volatility (section 3.15); and

o. evaluate prescribed assumptions and methods selected by another party, if applicable (section 3.16).

3.3 <u>Purpose of Measurement</u>—When measuring pension obligations and determining plan costs or contributions, the actuary should take into account the purpose of the measurement. Examples of measurement purposes are contribution requirements, accounting costs, benefit provision pricing, comparability assessments, withdrawal liabilities, benefit plan settlements, funded status assessments, market value assessments, and plan sponsor mergers and acquisitions.

3.3.1 <u>Anticipated Needs of Intended Users</u>—The actuary should consider the anticipated needs of different intended users. For example, some intended users may be interested in contribution requirements while others may be interested in evaluating benefit security. Some intended users may be interested in comparing pension obligations among different sponsoring entities while others may be interested in comparing a plan sponsor’s pension obligation to the plan sponsor’s other financial obligations.

3.3.2 <u>Projection or Point-in-Time</u>—The actuary should consider whether assumptions or methods need to change for measurements projected into the future compared to point-in-time measurements.

3.3.3 <u>Risk or Uncertainty</u>—Consistent with section 3.4.1 of ASOP No. 41, the actuary should consider the risk or uncertainty inherent in the measurement assumptions and methods and how the actuary’s measurement treats such risk or uncertainty.

3.4 <u>Measurement Date Considerations</u>—When measuring pension obligations and determining plan costs or contributions as of a measurement date, the actuary should consider the following:

3.4.1 <u>Information as of a Different Date</u>—The actuary may estimate asset and participant information at the measurement date on the basis of information as of a different date. In these circumstances, the actuary should make appropriate adjustments to the data. Alternatively, the actuary may calculate the obligations as of a different date and then adjust the obligations to the measurement date (see section 3.4.3 for additional guidance). In either case, the actuary should determine that any such adjustments are reasonable in the actuary's professional judgment, given the purpose of the measurement.

3.4.2 Events after the Measurement Date—Events known to the actuary that occur subsequent to the measurement date and prior to the date of the actuarial communication should be treated appropriately for the purpose of the measurement. Unless the purpose of the measurement requires the inclusion of such events, they need not be reflected in the measurement.

3.4.3 Adjustment of Prior Measurement—The actuary may adjust the results from a prior measurement in lieu of performing a new detailed measurement if, in the actuary's professional judgment, such an adjustment would produce a reasonable result for purposes of the measurement. To determine whether adjustment is appropriate, the actuary should consider items such as the following, if known to the actuary:

a. changes in the number of participants or the demographic characteristics of that group;

b. length of time since the prior measurement;

c. differences between actual and expected contributions, benefit payments, expenses, and investment performance;

d. changes in economic and demographic expectations; and

e. changes in plan provisions.

When adjusting obligations from a prior measurement date, the actuary should consider whether the assumptions used to determine the obligations should be revised.

3.5 Plan Provisions—When measuring pension obligations and determining plan costs or contributions, the actuary should take into account significant plan provisions as appropriate for the purpose of the measurement. However, if in the actuary's professional judgment, omitting a significant plan provision is appropriate for the purpose of the measurement, the actuary should disclose the omission in accordance with section 4.1(d).

3.5.1 Adopted Plan Changes—The actuary should take into account adopted plan provisions consistent with the following when determining costs or contributions for a period, unless contrary to applicable law:

a. Provisions adopted on or before the measurement date should be reflected for at least the portion of the period during which the provisions are in effect.

b. Provisions adopted after the measurement date may, but need not, be reflected.

3.5.2 Proposed Plan Changes—The actuary should reflect proposed plan changes as appropriate for the purpose of the measurement.

3.5.3 Other Valuation Issues—Some plan provisions may create pension obligations that are difficult to measure using deterministic procedures and assumptions selected in accordance with ASOP Nos. 27 and 35. Such plan provisions can include those provisions in which future benefits vary asymmetrically with future economic or demographic experience relative to the estimated projected benefits based on a particular set of actuarial assumptions. Examples of such plan provisions include the following:

a. gain sharing provisions that trigger benefit increases when investment returns are favorable;

b. floor-offset provisions that provide a minimum defined benefit in the event a participant's account balance in a separate plan falls below some threshold; or,

c. benefit provisions that are tied to an external index, but subject to a floor or ceiling, such as certain cost of living adjustment provisions and cash balance crediting provisions.

For such plan provisions, the actuary should consider using alternative procedures, such as stochastic modeling, option-pricing techniques, or assumptions that are adjusted to reflect the asymmetric impact of variations in experience from year to year. In selecting valuation procedures for such plan provisions, the actuary should use professional judgment based on the purpose of the measurement and other relevant factors. For example, using alternative procedures to capture the impact of asymmetric plan provisions may be appropriate for estimating an economic value. On the other hand, when determining plan contributions, concerns that certain assumed economic or demographic outcomes may not occur may lead the actuary to ignore asymmetric plan provisions such as shutdown benefits in order to avoid excess funding.

The actuary should disclose the approach taken with any plan provisions of the type described in this section, in accordance with section 4.1(h).

3.6 Data—With respect to the data used for measurements, including data supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance. In addition, the actuary should consider the following:

3.6.1 Participants—The actuary should include in the measurement all participants reported to the actuary, except in appropriate circumstances where the actuary may exclude persons such as those below a minimum age/service level. When appropriate, the actuary may include employees who might become participants in the future.

3.6.2 Hypothetical Data—When appropriate, the actuary may prepare measurements based on assumed demographic characteristics of current or future plan participants.

3.7 Types of Actuarial Present Values—An actuarial present value of a pension obligation will vary with two fundamental factors: the portion of the cost of projected benefits included in the calculation, as determined by the actuarial cost method, and the types of actuarial assumptions used, as addressed more fully in ASOP Nos. 27 and 35. The actuary should select the type of actuarial present value of a pension obligation that is appropriate for the purpose of the measurement.

3.7.1 Present Values Based on Plan Assets—Plan-asset-based present values of pension obligations vary with the allocation of the assets used to fund the obligation, and are typically based on a discount rate that reflects the expected return on plan assets. While plan-asset-based present values can be used for many purposes, they are typically used as funding targets to assess funded status and to determine contribution amounts such that, if the return on asset assumption is realized, assets would be expected to be adequate to provide for future benefits.

3.7.2 Present Values Not Based on Plan Assets—Present values of pension obligations that are not based on plan assets do not vary with the allocation of the assets used to fund the obligation, and the discount rate does not reflect the expected return on plan assets. Present values that are not based on plan assets can be based on a variety of different types of discount rates consistent with the purpose of the measurement. Examples include the following:

a. present values that vary with the risk of non-payment of scheduled benefits, which might depend on the amount of collateral in the form of plan assets and on the credit-worthiness of the plan sponsor;

b. present values that are based on a particular external yield curve, the choice of which does not vary with the risk of non-payment of scheduled benefits; and

c. present values that estimate the amount necessary to purchase nonparticipating annuities to settle the benefits accrued in a plan.

3.7.3 Market-Consistent Present Values—Market-consistent present values of pension obligations are types of present values not based on plan assets. A market-consistent present value is one that is consistent with the price at which expected plan benefit payments would trade in an open market between a knowledgeable seller and a knowledgeable buyer. The existence of a deep and liquid market for pension cash flows or for entire pension plans is not a prerequisite for this present value measurement. A market-consistent present value of a pension obligation may vary depending on the purpose of the measurement.

If the actuary calculates a market-consistent present value, the actuary should use assumptions that are consistent with assumptions behind market valuation of cash flows with term structure, credit quality, liquidity, and payment options that are similar to the pension plan cash flows being measured. In this calculation, the actuary will typically need to use estimates for valuation parameters that cannot be readily observed in the marketplace; for example, a discount rate for very long-dated pension cash flows. Additional considerations include, but are not limited to, the following:

a. If the actuary uses a market-consistent measurement for assessing plan solvency, the actuary should measure benefits earned as of the measurement date and should not reflect payment default risk;

b. If the actuary uses a market-consistent measurement for assessing ongoing funded status or contribution requirements, the actuary should assume an ongoing plan sponsor, should use professional judgment regarding the benefits to be measured, and should not reflect plan sponsor default risk; and

c. If the actuary uses a market-consistent measurement for assessing the economic value of a pension plan, the actuary should measure benefits earned as of the measurement date and should reflect payment default risk.

3.8 Actuarial Assumptions—The actuary should refer to ASOP Nos. 27 and 35 for guidance on the selection of actuarial assumptions.

3.9 Asset Valuation—The actuary should refer to ASOP No. 44 for guidance on the selection and use of an asset valuation method.

3.10 Measuring the Value of Accrued or Vested Benefits—Depending on the scope of the assignment, the actuary may measure the value of accrued or vested benefits as of a measurement date. The actuary should consider the following when making such measurements:

a. relevant plan provisions and applicable law;

b. the status of the plan (for example, whether the plan is assumed to continue to exist or be terminated);

c. the contingencies upon which benefits become payable, which may differ for ongoing- and termination-basis measurements;

d. the extent to which participants have satisfied relevant eligibility requirements for accrued or vested benefits and the extent to which future service or advancement in age may satisfy those requirements;

e. whether or the extent to which death, disability, or other ancillary benefits are accrued or vested;

f. whether the plan provisions regarding accrued benefits provide an appropriate attribution pattern for the purpose of the measurement (for example, following the attribution pattern of the plan provisions may not be appropriate if the plan's benefit accruals are severely backloaded); and

g. if the measurement reflects the impact of a special event (such as a plant shutdown or plan termination), factors such as the following:

   1. the effect of the special event on continued employment;

   2. the impact of the special event on employee behavior due to factors such as subsidized payment options;

   3. expenses associated with a potential plan termination, including transaction costs to liquidate plan assets; and

   4. changes in investment policy.

3.11 Relationship Between Procedures Used for Measuring Assets and Obligations—The actuary should measure assets and obligations on a consistent basis as of the measurement date. For example, if a participant was due a lump sum before the measurement date, but such lump sum had not been paid from plan assets as of the measurement date, the actuary should either include the participant's benefit due in obligations or exclude it from the asset value used in the measurement.

3.12 Actuarial Cost Method—When assigning costs or contributions to time periods in advance of the time benefit payments are due, the actuary should select an actuarial cost method that meets the following criteria:

a. The period over which normal costs are allocated for a participant should begin no earlier than the date of employment and should not extend beyond the last assumed retirement age. The period may be applied to each individual participant or to groups of participants on an aggregate basis.

When a plan has no active participants and no participants are accruing benefits, a reasonable actuarial cost method will not produce a normal cost for benefits. For purposes of this standard, an employee does not cease to be an active participant merely because he or she is no longer accruing benefits under the plan.

b. The attribution of normal costs should bear a reasonable relationship to some element of the plan's benefit formula or the participants' compensation or service. The attribution basis may be applied on an individual or group basis. For example, the actuarial present value of projected benefits for each participant may be allocated by that participant's own compensation or may be allocated by the aggregated compensation for a group of participants.

c. Expenses should be considered when assigning costs or contributions to time periods. For example, the expenses for a period may be added to the normal cost for benefits or expenses may be reflected as an adjustment to the investment return assumption or the discount rate. As another example, expenses may be reflected as a percentage of pension obligation or normal cost.

d. The sum of the actuarial accrued liability and the actuarial present value of future normal costs should equal the actuarial present value of projected benefits and expenses, to the extent expenses are included in the liability and normal cost. For purposes of this criterion, under an actuarial cost method that does not directly calculate an actuarial accrued liability, the sum of the actuarial value of assets and the unfunded actuarial accrued liability, if any, shall be considered to be the actuarial accrued liability.

3.13 <u>Allocation Procedure</u>—A cost or contribution allocation procedure typically combines an actuarial cost method, an asset valuation method, and an amortization method to determine the cost or contribution for the period. When selecting a cost or contribution allocation procedure, the actuary should consider factors such as the timing and duration of expected benefit payments and the nature and frequency of plan amendments. In addition, the actuary should consider relevant input received from the principal, such as a desire for stable or predictable costs or contributions, or a desire to achieve a target funding level within a specified time frame.

3.13.1 <u>Consistency Between Contribution Allocation Procedure and the Payment of Benefits</u>—In some circumstances, a contribution allocation procedure may not necessarily produce adequate assets to make benefit payments when they are due even if the actuary uses a combination of assumptions selected in accordance with ASOP Nos. 27 and 35, an actuarial cost method selected in accordance with section 3.12 of this standard, and an asset valuation method selected in accordance with ASOP No. 44.

Examples of such circumstances include the following:

a. a plan covering a sole proprietor with funding that continues past an expected retirement date with payment due in a lump sum;

b. using the aggregate funding method for a plan covering three employees, in which the principal is near retirement and the other employees are relatively young; and

c. a plan amendment with an amortization period so long that overall plan contributions would be scheduled to occur too late to make plan benefit payments when due.

3.13.2 Actuary Selects Contribution Allocation Procedure—When performing professional services with respect to contributions for a plan, the actuary should select a contribution allocation procedure that, in the actuary's professional judgment, is consistent with the plan accumulating adequate assets to make benefit payments when due, assuming that all actuarial assumptions will be realized and that the plan sponsor or other contributing entity will make contributions when due.

3.13.3 Actuary Does Not Select Contribution Allocation Procedure—In some circumstances, the actuary's role is to determine the contribution, or range of contributions, using a contribution allocation procedure prescribed by law or selected by another party. If, in the actuary's professional judgment, such a contribution allocation procedure is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, assuming that all actuarial assumptions will be realized and that the plan sponsor or other contributing entity will make contributions when due, the actuary should disclose this in accordance with section 4.1(l).

3.13.4 Assessment of Overall Implications of Contribution Allocation Procedure—Regardless of who selects the contribution allocation procedure, the actuary should assess the expected cost progression implications of the assumptions and methods selected. If the use of such assumptions and methods would be expected to result in either declining future funded status measures or increasing future contribution requirements, such expectation should be disclosed as described in section 4.1(l). For this purpose, contribution increases associated with expected increases in participant compensation should not be considered an increasing future contribution requirement.

3.13.5 Contributions Set by Contract or Law—In some circumstances contributions are not based on the contribution allocation procedure, but are based on rates set in law or by contract, typically a collective bargaining agreement. In those circumstances, the actuary should assess the expected cost progression implications of the contributions set by contract or law. If the use of such contributions would be expected to result in either declining future funded status measures or increasing future contribution requirements, such expectation should be disclosed as described in section 4.1(l).

This standard does not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make contributions to the plan when due.

3.14 <u>Approximations and Estimates</u>—The actuary should use professional judgment to establish a balance between the degree of refinement of methodology and materiality. The actuary may use approximations and estimates where circumstances warrant. Following are some examples of such circumstances:

a. situations in which the actuary reasonably expects the results to be substantially the same as the results of detailed calculations;

b. situations in which the actuary's assignment requires informal or rough estimates; and

c. situations in which the actuary reasonably expects the benefits being valued to represent only a minor part of the overall pension obligation, cost, or contribution.

3.15 <u>Volatility</u>—If the scope of the actuary's assignment includes an analysis of the potential range of future pension obligations, costs, contributions, or funded status, the actuary should consider sources of volatility that, in the actuary's professional judgment, are significant. Examples of potential sources of volatility include the following:

a. plan experience differing from that anticipated by the economic or demographic assumptions, as well as the effect of new entrants;

b. changes in economic or demographic assumptions;

c. the effect of discontinuities in applicable cost or funding regulations, such as full funding limitations, the end of amortization periods, or liability recognition triggers;

d. the delayed effect of smoothing techniques, such as the pending recognition of prior experience losses; and

e. patterns of rising or falling cost expected when using a particular actuarial cost method for the plan population.

In analyzing potential variations in economic and demographic experience or assumptions, the actuary should exercise professional judgment in selecting a range of variation in these factors and in selecting a methodology by which to analyze them, consistent with the scope of the assignment.

3.16 Evaluation of Assumptions and Methods—An actuarial communication should identify the party responsible for each material assumption and method. Where the communication is silent about such responsibility, the actuary who issued the communication will be assumed to have taken responsibility for that assumption or method.

3.16.1 Prescribed Assumption or Method Set by Another Party—The actuary should evaluate whether a prescribed assumption or method selected by another party (as defined in section 2.19) is reasonable for the purpose of the measurement, except as provided in section 3.16.3. The actuary should be guided by Precept 8 of the *Code of Professional Conduct*, which states, "An Actuary who performs Actuarial Services shall take reasonable steps to ensure that such services are not used to mislead other parties." For purposes of this evaluation, reasonable assumptions or methods are not necessarily limited to those the actuary would have selected for the measurement.

3.16.2 Evaluating Prescribed Assumption or Method—When evaluating a prescribed assumption or method selected by another party, the actuary should consider whether the prescribed assumption or method significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the measurement. If, in the actuary's professional judgment, there is a significant conflict, the actuary should disclose this conflict in accordance with section 4.2 (b).

3.16.3 Inability to Evaluate Prescribed Assumption or Method—If the actuary is unable to evaluate a prescribed assumption or method selected by another party without performing a substantial amount of additional work beyond the scope of the assignment, the actuary should disclose this in accordance with section 4.2.

Section 4. Communications and Disclosures

4.1 Communication Requirements—Any actuarial communication prepared to communicate the results of work subject to this standard must comply with the requirements of ASOP Nos. 23, 27, 35, 41, and 44. In addition, such communication should contain the disclosures listed below, where relevant and material. An actuarial communication can comply with some, or all, of the specific requirements of this section by making reference to information contained in other actuarial communications available to the intended users (as defined in ASOP No. 41), such as an annual actuarial valuation report.

a. a statement of the intended purpose of the measurement and a statement to the effect that the measurement may not be applicable for other purposes;

b. the measurement date;

c. a description of adjustments made for events after the measurement date under section 3.4.2;

d. an outline or summary of the plan provisions included in the actuarial valuation and of any significant plan provisions not included in the actuarial valuation, along with the rationale for not including such significant plan provisions;

e. the date(s) as of which the participant and financial information were compiled;

f. a summary of the participant information;

g. if hypothetical data are used, a description of the data;

h. a description of the methods used to value any significant benefit provisions described in section 3.5.3 such that another actuary could make an assessment as to the reasonableness of the methodology used;

i. the type of actuarial present value contained in the actuary's work product (plan-asset-based or not based on plan assets as described in section 3.7) and a general description of the implications of the chosen actuarial present value type. For example, if the present value is asset based, the actuary may include a statement that the use of such values may create incentives to adopt riskier investment policies that increase expected return and lead to lower reported cost or improve the plan's reported funded status. As another example, if the actuarial present value is not based on plan assets, the actuary may include a statement that such present values are often volatile from one year to the next and may create incentives to adopt investment policies that attempt to track the movement of the actuarial present value measurement;

j. a description of the actuarial cost method and the manner in which normal costs are allocated, in sufficient detail to permit another actuary qualified in the same practice area to assess the material characteristics of the method (for example, how the actuarial cost method is applied to multiple benefit formulas, compound benefit formulas, or benefit formula changes, where such plan provisions are significant);

k. a description of the cost or contribution allocation procedure including a description of amortization methods and amortization bases, and a description of any pay-as-you-go funding (i.e., the intended payment by the plan sponsor of some or all benefits when due);

l. a statement indicating that the contribution allocation procedure is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, if applicable in accordance with section 3.13, or a statement regarding the expectation of declining future funding status or increased contribution requirements, if applicable,;

m. a description of the types of benefits regarded as vested and accrued if the actuary measured the value of accrued or vested benefits, and, to the extent the attribution pattern of accrued benefits differs from or is not described by the plan provisions, a description of the attribution pattern;

n. funded status based on the market value of assets if the actuary discloses a funded status based on a value of assets that is not equal to the market value of assets;

o. funded status based on an immediate gain actuarial cost method if the actuary discloses a funded status based on a spread gain actuarial cost method. The immediate gain actuarial method used for this purpose should be disclosed in accordance with section 4.1(j);

p. a description of the particular measures of plan assets and plan obligations that led the actuary to describe a plan as fully funded or describe a plan in a way that conveys a similar message (for example, 100% funded). The actuary should accompany this description with each of the following additional disclosures:

    1. whether the plan's market value of assets equals or exceeds the estimated cost to settle the benefit obligations;

    2. that fully funded is a temporary measure at a particular point in time;

    3. whether there is significant risk that the plan could cease to be fully funded; and

    4. that additional contributions to the plan may be required if the plan is fully funded relative to the present value of accrued benefits but not relative to the present value of projected benefits.

q. a statement, appropriate for the intended users (as defined in ASOP No. 41), indicating that future measurements (for example, of pension obligations, costs, contributions, or funded status as applicable) may differ significantly from the current measurement. For example, a statement such as the following could be applicable: "Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law."

    In addition, the actuarial communication should include one of the following:

1. if the scope of the actuary's assignment included an analysis of the range of such future measurements, disclosure of the results of such analysis together with a description of the factors considered in determining such range; or

2. a statement indicating that, due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements;

r. a description of known changes in assumptions and methods from those used in the immediately preceding measurement prepared for a similar purpose. For assumption and method changes that are not set by another party (as described in section 2.19) and are not prescribed by law (as described in section 2.20) , the actuary should include an explanation of the information and analysis that led to those changes. For all changes in cost or contribution allocation procedures, including the resetting of an actuarial asset value, the actuary should disclose the reason the actuary made the change and the general effects of the change on relevant cost, contribution, funded status, or other measures, by words or numerical data, as appropriate;

s. a description of adjustments of prior measurements used under section 3.4.3; and

t. if, in the actuary's professional judgment, the actuary's use of approximations or estimates could result in a significant margin for error relative to the results if a detailed calculation had been done, a statement to this effect.

4.2 Additional Disclosures—The actuary should include the following, as applicable, in an actuarial communication:

a. the disclosure in ASOP No. 41, section 4.2, for any material prescribed assumption or method set by law, as defined in section 2.20;

b. the disclosure in ASOP No. 41, section 4.3 for any material prescribed assumption or method set by another party, as defined in section 2.19;

c. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

d. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.