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REPORT ON ACTUARIAL TERMINOLOGY FOR PENSION PLANS

To: Members of the Society of Actuaries

From: Committee on Pensions

The accompanying report of the Committee on Pensions was initially undertaken as an effort to assist the Committee on Actuarial Principles and Practices in Connection with Pension Plans of the American Academy of Actuaries with respect to recommendations it had been preparing. This project was broadened somewhat, as indicated in our exposure draft of this report sent to all members.

Responses to the exposure draft have been reviewed and appropriate modifications made. The committee has recommended to the Board of Governors that the revised report be adopted, and the Board has unanimously approved a resolution authorizing the committee to

"(1) Issue the Report entitled "Actuarial Terminology for Pension Plans" (copy on file) as an Opinion of the Pension Committee pursuant to Article X, paragraph 2 of the Constitution; and
(2) Refer this Report to the Committee on Standard Notation and Nomenclature, and to the Board of Publications, and to encourage these groups to promote the use of the new terminology in Society publications; and
(3) Issue the Report to the membership; and
(4) Refer the Report to appropriate committees of the American Academy of Actuaries and the Canadian Institute of Actuaries along with a recommendation that these bodies encourage the use of the new terminology; and
(5) Continue discussions with Federal administrative officials about an extension of terminology definition, with particular emphasis on terms found in the Pension Reform Act and related issuances, working with appropriate committees in the American Academy of Actuaries."

This report is offered in an effort to promote better understanding of pension terminology. In instances where the existing nomenclature is misleading, the committee has developed preferential expressions. This is particularly significant with respect to the term *liability*. The committee has included a discussion of characteristics underlying cost methods.

The committee anticipates that additional work will be needed to coordinate this effort with regulatory efforts prompted by the pension reform act. It is hoped that a further list of terms reflecting specific words used in ERISA can be prepared, with pertinent definitions along with references to clarifying expressions suggested by the committee where appropriate.

Respectfully,

COMMITTEE ON PENSIONS

Committee on Pensions

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I. INTRODUCTION

THE actuarial terminology for pension plans has been developed in a relatively uncontrolled environment. Notwithstanding several attempts to standardize and clarify pension actuarial nomenclature, some of the more commonly used terms are poorly defined or misleading.

To promote greater understanding of pension actuarial matters by those parties involved with pension plans and to advance the prospect of achieving meaningful compliance with the disclosure requirements of ERISA and of Opinion S-4, the Committee on Pensions has developed recommended terminology. In those instances where the existing nomenclature is misleading, the Committee on Pensions has developed preferred expressions.

The committee has found that there is widespread misunderstanding of the commonly used descriptions of actuarial valuation methods. A separate section in this report attempts to clarify these.

The recommendations of the committee are based on compromises among the definitions and terminology used in practice, those published by the accounting profession, and those developed by the Pension Research Council. The committee recognizes that, as with all compromises, these recommendations will not completely satisfy anyone. However, the committee believes that the benefits to be gained by standardization far outweigh the disadvantages, and it therefore recommends that the suggested definitions and terminology be adhered to in all reports and communications.

ERISA uses some terms that are actuarial in nature or that have actuarial implications even though they are not essentially actuarial terms. Some of the ERISA terms antedate this report and are different from the terminology that follows. The committee expects to prepare a supplementary report taking up some of these matters specifically when and if it appears that such a supplementary report will serve a useful purpose.

II. DEFINITION OF TERMS

The committee believes that the use of the term *liability* or *cost* in connection with the terms *actuarial, past service, prior service,* or *supplemental* should be discouraged. The principal reason for this belief is that the amount the actuary associates with these terms, in many situations, is not currently a debt of anyone and is thus neither a liability nor a cost in the usual accounting or popular sense. For example, the *supplemental present value* under the *entry age method* is unrelated to the value of the benefits accrued to date (whether or not funded) and is generally unrelated to the current obligation of anyone. The actuary is encouraged to describe the values involved more accurately as *supplemental present values* (see definition 13 below).

In the definitions that follow, the treatment of the expense item has been omitted. The actuary should include a reference to expenses in these definitions where appropriate.

1. *Actuarial assumptions*
   Assumptions as to the occurrence of future events affecting pension costs, such as mortality rates, employee withdrawal rates, changes in compensation levels, retirement ages, rates of investment return, changes in group size and characteristics, and others.
2. *Actuarial equivalence*
   The situation where two or more items have an equal actuarial present value under a selected set of *actuarial assumptions.*
3. *Actuarial (or accrued) liability*
   The recommended terminology is *supplemental present value.*
4. *Actuarial revaluation gain or loss*
   The effect on the *unfunded supplemental present value* of changes in the *actuarial valuation method* or in the *actuarial assumptions.*
5. *Actuarial valuation*
   The determination, as of a specified date, of the *actuarial value of the fund* and, in accordance with an *actuarial valuation method*, of the *normal cost, supplemental present value*, and other relevant actuarial present values for the plan.
6. *Actuarial valuation methods*
   Techniques, using *actuarial assumptions*, for measuring the expected cost of benefits for defined benefit pension plans and allocating such costs to time periods. Please refer to Section III, "Actuarial Valuation Methods," for definitions and descriptions of the commonly used methods.

7. *Actuarial value of the fund (assets)*
The value assigned by the actuary to the assets of the plan for the purposes of the *actuarial valuation*, determined on a basis consistent with the *actuarial assumptions* employed in determining the *normal cost* and the *supplemental present value*, and generally giving consideration to such elements as the anticipated cash flow and the market value of assets.
8. *Experience gain or loss*
The effect on the *unfunded supplemental present value* of deviations between the past events which would have occurred according to the *actuarial assumptions* and those which actually occurred.
9. *Normal cost*
That part of the actuarial present value of future benefits allocated as a cost for each year or other period subsequent to a particular valuation date under the *actuarial valuation method* in use, excluding any amortization of *unfunded supplemental present value.*
10. *Past-service cost*
The recommended terminology is *supplemental present value.*
11. *Prior-service cost*
The recommended terminology is *supplemental present value.*
12. *Supplemental liability*
The recommended terminology is *supplemental present value.*
13. *Supplemental present value*
The excess of the actuarial present value of all future benefits provided under a plan over the actuarial present value of all future *normal costs* (including any participants' contributions) with respect to the participants included in the valuation of the plan.
14. *Unfunded supplemental present value*
The excess of the *supplemental present value* over the *actuarial value of the fund.*

III. ACTUARIAL VALUATION METHODS

The purpose of this section is to define the commonly used actuarial valuation methods in sufficient detail to eliminate the ambiguity in meaning that currently exists. The committee recommends that the actuary clearly define in his reports and communications the actuarial valuation methods he uses in order to disclose to the parties relying on these reports and communications the techniques used to allocate plan costs.

Before defining the actuarial valuation methods in common use, it is desirable to describe the following characteristics of these methods:

a) *Unprojected or projected benefits*
A benefit is said to be *unprojected* when its amount is determinable as the accrued benefit under the plan without reliance upon assumptions as to events beyond the next valuation date. A *projected* benefit, on the other hand, is one that must be determined on an estimated basis, using assumptions as to the occurrence of future events.

b) *Attained age or entry age*
This characteristic describes the time at which the *normal costs* are assumed to commence. *Attained* age is the current age on the date of the valuation. *Entry* age is the age at which an employee first was included, or would have been included if the plan had always been in effect, in the *actuarial valuation* in accordance with the *actuarial valuation method* and *assumptions*. In method 2 or method 5 below, an average entry age or an assumed entry age is sometimes used.

c) *Individual or aggregate determination*
An *individual* approach is one under which the *normal cost* for the plan is the sum of individual normal costs, each individual normal cost accrual rate being determined by dividing the actuarial present value of the benefits for the individual participant by the actuarial present value of the units (such as the future earnings or years of service) over which costs are spread for the participant. An *aggregate* approach determines a normal cost accrual rate that is the same for all participants by dividing the sum of the actuarial present value of benefits for all participants, reduced by any *actuarial value of the fund* and *unfunded supplemental present value*, by the sum of the *actuarial present values* for all participants of units (such as future earnings or years of service) over which costs are to be spread. In each case, the normal cost is determined by multiplying the pertinent normal cost accrual rate by the number of units allocable to the period for which the normal cost is being determined.

d) *With or without initial supplemental present value*
In the initial application of an actuarial valuation method, the actuarial present value of future benefits will be equal to or exceed the actuarial present value of future normal costs. In the former case the actuarial valuation method is *without* initial *supplemental present value*, and in the latter case it is *with* initial *supplemental present value*, the amount of which is the excess.

e) *Closed or open group*
An actuarial valuation method may be applied to current participants with no recognition of entrants beyond the next valuation date, in which case the process is called a *closed-group* valuation. An *open-*

group valuation specifically provides for new entrants to the plan in the future.

Commonly used actuarial valuation methods, defined in terms of these characteristics, are set forth below. These definitions anticipate closed-group valuation:

1. *Accrued benefit method*

   Characteristics: Unprojected or projected benefits, attained age, individual basis, with initial supplemental present value if benefits are allocated to prior service.

   Normal cost for any year is the actuarial present value of the benefits deemed to accrue in such year.

   Supplemental present value on any date can be computed as the actuarial present value of the benefits deemed to have accrued prior to such date. The term *present value of accrued benefits* is also acceptable in lieu of *supplemental present value* under this method.

2. *Entry age method*

   Characteristics: Projected benefit, entry age, individual (see *frozen initial method* for aggregate basis), with initial supplemental present value, open or closed group.

   Normal cost is a level dollar amount or level percentage of covered earnings such that, as of the entry age, the actuarial present value of future normal costs is equal to the actuarial present value of projected benefits. The entry age for actuarial cost determination purposes is sometimes taken to be an average or assumed entry age, or an average age at commencement of funding that may not be the same as the age at which participation in the plan began.

   Supplemental present value on any date is the excess of the actuarial present value of all future benefits over the actuarial present value of all future normal costs.

3. *Aggregate attained age method*

   Characteristics: Projected benefit, attained age, aggregate basis, without initial supplemental present value, open or closed group.

   Normal cost is a level dollar amount or level percentage of covered earnings such that, on the valuation date, the actuarial present value of future normal costs is equal to the actuarial present value of projected benefits less the actuarial value of the fund.

   Supplemental present value on any date is identical with the actuarial value of the fund.

4. *Individual attained age method*

   Characteristics: Projected benefit, attained age, individual basis, without initial supplemental present value, open or closed group.

   Normal cost is the sum of the normal costs for each projected benefit increment on the valuation date for the year or other period to which the normal cost applied. Normal cost for each projected benefit increment is a level dollar amount or level percentage of covered earnings such that the actuarial present value of future normal costs for each increment, as of the valuation date in which it is deemed to arise, is equal to the actuarial present value of the projected benefit increment.

   Supplemental present value on any date is the excess of the actuarial present value of all future benefits over the actuarial present value of all future normal costs.

5. *Frozen initial method*

   Characteristics: Projected benefit, entry or attained age, aggregate basis, with initial supplemental present value.

   The *frozen initial value* is the supplemental present value on the effective date of the plan normally determined by the entry age or accrued benefit method.

   Normal cost is a level dollar amount or level percentage of covered earnings such that the actuarial present value of future normal costs on the valuation date plus the supplemental present value equals the actuarial present value of projected benefits.

   Supplemental present value on any date is the sum of the actuarial value of the fund and the unamortized portion of the frozen initial value.

APPENDIX

CONSIDERATIONS RELATIVE TO THE TERM *SUPPLEMENTAL PRESENT VALUE*

The term *supplemental present value* is a significant departure from traditional terminology and has stimulated considerable discussion. The committee feels that a statement of its rationale in recommending this term should be made to the membership.

Terms such as *past- (prior-) service cost* and *actuarial (accrued) liability* convey a concept that often is not warranted. For example, these terms have created the impression in the minds of some that, from an accounting standpoint, such amounts are properly allocable to a prior period or that such amounts constitute a current liability of the plan sponsor.

The accounting profession has studied the question of whether or not to

charge the retained earnings of the business with contributions designed to amortize such amounts. *Accounting Research Bulletin No. 36: Pension Plans—Accounting for Annuity Cost Based on Past Services* (1948) seemed to reach the conclusion that these contributions should be charged against current and future periods. (*ARB 36* was incorporated in *ARB 43* as chapter 13A [1953].) However, *Accounting Research Bulletin No. 47: Accounting for Costs of Pension Plans* (1956) raised the issue of inadequate charges or no charges for past services in an existing plan, and uncertainty continued.

The result was that some governmental agencies did not accept amortization (or interest only) accruals relative to unfunded amounts as an appropriate charge against current and future periods. With the publication of *Accounting Principles Board Opinion No. 8*, this matter seemed to be clarified for accountants. However, some legislators still seem to feel that a *past-service liability* is an amount fundamentally arising from a prior period, rather than simply a convenient label for actuarial values other than values allocated to normal costs.

There are many members of the actuarial profession who are content with the term *past-service cost* as employed in the *Bulletin on Section 23(p)(1)(A) and (B) of the Internal Revenue Code*, published in June, 1945. Others are content with the term *supplemental liability* adopted by the Committee on Pension and Profit Sharing Terminology formed under the joint auspices of the Commission on Insurance Terminology and the Pension Research Council of the University of Pennsylvania.

The term *supplemental present value* used in the current terminology report is a substantial change from *past- (prior-) service cost*, although it is much less of a change from *supplemental liability*. Substitution of the words *present value* for the word *liability* is strongly favored by the committee as being both (i) more logical, since the amount involved is equivalent to the present value of benefits less the present value of future normal costs, and (ii) less misleading than the word *liability*, which implies a legal obligation that is generally absent in pension situations.

The committee feels that, as benefit patterns have changed (for example, relating benefits to a function of both final average earnings and service, so that benefits for a specific period of service are to some extent indeterminate until all service has been completed), and as funding approaches have changed (for example, the shift in emphasis from allocated to unallocated funding methods), the term *past- (prior-) service cost* carries with it an implication of a distinction between costs associated with past and future periods that is now often unwarranted.

The committee has also noted the extensive deliberations of the Principles and Practices Committee of the American Academy of Actuaries that eventually led to changing the references in early drafts of Recommendation A from *liability* to *present value*.

With these thoughts in mind, the committee recommends the use of the term *supplemental present value*.