

CHAPTER 2711
DEPARTMENT OF COMMERCE
ACTUARIAL OPINION AND MEMORANDUM

<p>2711.0200 SCOPE. 2711.0210 DEFINITIONS. 2711.0220 GENERAL REQUIREMENTS.</p>	<p>2711.0230 STATEMENT OF ACTUARIAL OPINION BASED ON AN ASSET ADEQUACY ANALYSIS. 2711.0240 DESCRIPTION OF ACTUARIAL MEMORANDUM INCLUDING AN ASSET ADEQUACY ANALYSIS AND REGULATORY ASSET ADEQUACY ISSUES SUMMARY.</p>
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2711.0020 [Repealed, 37 SR 1455]

2711.0030 [Repealed, 37 SR 1455]

2711.0040 [Repealed, 37 SR 1455]

2711.0050 [Repealed, 37 SR 1455]

2711.0060 [Repealed, 37 SR 1455]

2711.0070 [Repealed, 37 SR 1455]

2711.0080 [Repealed, 37 SR 1455]

2711.0090 [Repealed, 37 SR 1455]

2711.0100 [Repealed, 37 SR 1455]

2711.0200 SCOPE.

This chapter applies to all life insurance companies and fraternal benefit societies doing business in this state and to all life insurance companies and fraternal benefit societies that are authorized to reinsure life insurance, annuities, or accident and health insurance business in this state. This chapter must be applied in a manner that allows the appointed actuary to use professional judgment in performing the asset analysis and developing the actuarial opinion and supporting memoranda, consistent with relevant actuarial standards of practice. However, the commissioner may specify specific methods of actuarial analysis and actuarial assumptions when, in the commissioner's judgment, these specifications are necessary for an acceptable opinion to be rendered relative to the adequacy of reserves and related items.

A statement of opinion on the adequacy of the reserves and related actuarial items based on an asset adequacy analysis in accordance with part 2711.0230, and a memorandum in support thereof in accordance with part 2711.0240, shall be required each year.

Statutory Authority: *MS s 45.023; 61A.25*

History: *37 SR 1455*

2711.0210 DEFINITIONS.

Subpart 1. **Scope.** For purposes of this chapter, the terms in this part have the meanings given them.

Subp. 2. **Actuarial opinion.** "Actuarial opinion" means the opinion of an appointed actuary regarding the adequacy of the reserves and related actuarial items based on an asset adequacy analysis according to part 2711.0230 and with applicable Actuarial Standards of Practice.

Subp. 3. **Actuarial Standards Board.** "Actuarial Standards Board" means the board established by the American Academy of Actuaries to develop and adopt standards of actuarial practice.

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Subp. 4. **Annual statement.** "Annual statement" means the statement required by Minnesota Statutes, section 60A.13, of the insurance law to be filed by the company with the commissioner annually.

Subp. 5. **Appointed actuary.** "Appointed actuary" means an individual who is appointed or retained in accordance with part 2711.0220, subpart 3, to provide the actuarial opinion and supporting memorandum as required by Minnesota Statutes, section 61A.25, subdivision 2a.

Subp. 6. **Asset adequacy analysis.** "Asset adequacy analysis" means an analysis that meets the standards and other requirements in part 2711.0220, subpart 4.

Subp. 7. **Commissioner.** "Commissioner" means the commissioner of commerce.

Subp. 8. **Company.** "Company" means a life insurance company, fraternal benefit society, or reinsurer subject to the provisions of this chapter.

Subp. 9. **Qualified actuary.** "Qualified actuary" means an individual who meets the requirements in part 2711.0220, subpart 2.

Statutory Authority: *MS s 45.023; 61A.25*

History: *37 SR 1455*

2711.0220 GENERAL REQUIREMENTS.

Subpart 1. **Submission of Statement of Actuarial Opinion.**

A. There is to be included on or attached to page 1 of the annual statement for each year the statement of an appointed actuary, entitled, "Statement of Actuarial Opinion," setting forth an opinion relating to reserves and related actuarial items held in support of policies and contracts, in accordance with part 2711.0230.

B. Upon written request by the company, the commissioner may grant an extension of the date for submission of the Statement of Actuarial Opinion.

Subp. 2. **Qualified actuary.** A qualified actuary is an individual who:

A. is a member in good standing of the American Academy of Actuaries;

B. is qualified to sign statements of actuarial opinion for life and health insurance company annual statements in accordance with the American Academy of Actuaries qualification standards for actuaries signing such statements;

C. is familiar with the valuation requirements applicable to life and health insurance companies;

D. has not been found by the commissioner, or if so found has subsequently been reinstated as a qualified actuary, following appropriate notice and hearing, to have:

(1) violated any provision of, or any obligation imposed by, the insurance law or other law in the course of the individual's dealings as a qualified actuary;

(2) been found guilty of fraudulent or dishonest practices;

(3) demonstrated the individual's incompetency, lack of cooperation, or untrustworthiness to act as a qualified actuary;

(4) submitted to the commissioner during the past five years, pursuant to this chapter, an actuarial opinion or memorandum that the commissioner rejected because it did not meet the provisions of this chapter including standards set by the Actuarial Standards Board; or

(5) resigned or been removed as an actuary within the past five years as a result of acts or omissions indicated in any adverse report on examination or as a result of failure to adhere to generally acceptable actuarial standards; and

E. has not failed to notify the commissioner of any action taken by any commissioner of any other state similar to that under item D.

Subp. 3. **Appointed actuary.** An appointed actuary is a qualified actuary who is appointed or retained by the board of directors to prepare the Statement of Actuarial Opinion

required by this chapter. The company shall give the commissioner timely written notice of the name and title of each person appointed or retained by the company as an appointed actuary and shall state in the notice that the person meets the requirements in subpart 2. In the case of a consulting actuary, the company shall include the name of the firm in the notice. Once notice is furnished, no further notice is required with respect to this person, provided that the company gives the commissioner timely written notice in the event the actuary ceases to be appointed or retained as an appointed actuary or to meet the requirements in subpart 2. If any person appointed or retained as an appointed actuary replaces a previously appointed actuary, the notice must so state and give the reasons for replacement.

Subp. 4. Standards for asset adequacy analysis. The asset adequacy analysis required by this chapter:

A. must conform to the Standards of Practice as adopted from time to time by the Actuarial Standards Board and on any additional standards under this chapter, which standards are to form the basis of the Statement of Actuarial Opinion in accordance with this chapter; and

B. must be based on methods of analysis as are deemed appropriate for such purposes by the Actuarial Standards Board.

Subp. 5. Liabilities to be covered.

A. Under authority of Minnesota Statutes, section 61A.25, subdivision 2a, the Statement of Actuarial Opinion applies to all in force business on the statement date, whether directly issued or assumed, regardless of when or where issued. For example, reserves of Exhibits 5, 6, and 7, and claim liabilities in Exhibit 8, Part 1, and equivalent items in the separate account statement or statements.

B. If the appointed actuary determines as the result of asset adequacy analysis that a reserve should be held in addition to the aggregate reserve held by the company and calculated in accordance with methods in Minnesota Statutes, section 61A.25, the company shall establish the additional reserve.

C. Additional reserves established under item B and deemed not necessary in subsequent years may be released. Any amounts released must be disclosed in the actuarial opinion for the applicable year. The release of reserves would not be deemed an adoption of a lower standard of valuation.

Statutory Authority: *MS s 45.023; 61A.25*

History: *37 SR 1455*

2711.0230 STATEMENT OF ACTUARIAL OPINION BASED ON AN ASSET ADEQUACY ANALYSIS.

Subpart 1. General description. The Statement of Actuarial Opinion submitted in accordance with this part consists of:

A. a paragraph identifying the appointed actuary and the actuary's qualifications;

B. a scope paragraph identifying the subjects on which an opinion is to be expressed and describing the scope of the appointed actuary's work, including a tabulation delineating the reserves and related actuarial items that have been analyzed for asset adequacy and the method of analysis, and identifying the reserves and related actuarial items covered by the opinion that have not been so analyzed;

C. a reliance paragraph describing those areas, if any, where the appointed actuary has deferred to other experts in developing data, procedures or assumptions, for example, anticipated cash flows from currently owned assets, including variation in cash flows according to economic scenarios, supported by a statement of each expert in the form prescribed by subpart 5;

D. an opinion paragraph expressing the appointed actuary's opinion with respect to the adequacy of the supporting assets to mature the liabilities; and

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E. one or more additional paragraphs as needed in individual company cases as follows:

(1) if the appointed actuary considers it necessary to state a qualification of the actuary's opinion;

(2) if the appointed actuary must disclose an inconsistency in the method of analysis or basis of asset allocation used at the prior opinion date with that used for this opinion;

(3) if the appointed actuary must disclose whether additional reserves as of the prior opinion date are released as of this opinion date, and the extent of the release; or

(4) if the appointed actuary chooses to add a paragraph briefly describing the assumptions that form the basis for the actuarial opinion.

Subp. 2. **Recommended language.** Items A to F are included in the Statement of Actuarial Opinion in accordance with this part. Language is that which in typical circumstances should be included in a Statement of Actuarial Opinion. The language may be modified as needed to meet the circumstances of a particular case, but the appointed actuary should use language that clearly expresses professional judgment. However, in any event the opinion must retain all pertinent aspects of the language provided in this part.

A. The opening paragraph should generally indicate the appointed actuary's relationship to the company and qualifications to sign the opinion. For a company actuary, the opening paragraph of the actuarial opinion should include a statement such as:

"I, [name], am [title] of [insurance company name] and a member of the American Academy of Actuaries. I was appointed by, or by the authority of, the Board of Directors of the insurer to render this opinion as stated in the letter to the commissioner dated [insert date]. I meet the Academy qualification standards for rendering the opinion and am familiar with the valuation requirements applicable to life and health insurance companies."

For a consulting actuary, the opening paragraph should include a statement such as:

"I, [name], a member of the American Academy of Actuaries, am associated with the firm of [name of consulting firm]. I have been appointed by, or by the authority of, the Board of Directors of [name of company] to render this opinion as stated in the letter to the commissioner dated [insert date]. I meet the Academy qualification standards for rendering the opinion and am familiar with the valuation requirements applicable to life and health insurance companies."

B. The scope paragraph should include a statement such as:

"I have examined the actuarial assumptions and actuarial methods used in determining the reserves and related actuarial items listed below, as shown in the annual statement of the company, as prepared for filing with the state regulatory officials, as of December 31, 20... Tabulated below are those reserves and related actuarial items that have been subjected to asset adequacy analysis."

Asset Adequacy Tested Amounts--Reserves and Liabilities					
Statement Item	Formula Reserves (1)	Additional Actuarial Reserves (a) (2)	Analysis Method (b)	Other Amount (3)	Total Amount (1)+(2)+(3) (4)
Exhibit 5					
Life Insurance					
Annuities					

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Supplementary Contracts Involving Life Contingencies					
Accidental Death Benefit					
Disability--Active					
Disability--Disabled					
Miscellaneous					
Total Exhibit 5					
Exhibit 6					
Active Life Reserve					
Claim Reserve					
Total Exhibit 6					
Exhibit 7					
Guaranteed Interest Contracts					
Annuities Certain					
Supplemental Contracts					
Dividend Accumulations or Refunds					
Premium and Other Deposit Funds					
Total Exhibit 7					
Exhibit 8 Part 1					
Life					
Health					
Total Exhibit 8, Part 1					
Separate Accounts (Page 3 of the Annual Statement of the Separate Accounts, Lines 1 and 2)					
TOTAL RESERVES					

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IMR (General Account, Page __ Line __)	
(Separate Accounts, Page __ Line __)	
AVR (Page __ Line __)	(c)
Net Deferred and Uncollected Premium	

Notes:

(a) The additional actuarial reserves are the reserves established under part 2711.0220, subpart 5, item B.

(b) The appointed actuary should indicate the method of analysis, determined in accordance with the standards for asset adequacy analysis referred to in part 2711.0220, subpart 4, by means of symbols that should be defined in footnotes to the table.

(c) Allocated amount of Asset Valuation Reserve (AVR).

C. If the appointed actuary has relied on other experts to develop certain portions of the analysis, the reliance paragraph should include a statement such as:

"I have relied on [name], [title] for [e.g., "anticipated cash flows from currently owned assets, including variations in cash flows according to economic scenarios" or "certain critical aspects of the analysis performed in conjunction with forming my opinion"], as certified in the attached statement. I have reviewed the information relied upon for reasonableness."

A statement of reliance on other experts should be accompanied by a statement by each of the experts in the form prescribed by part 2711.0230, subpart 5.

D. If the appointed actuary has examined the underlying asset and liability records, the reliance paragraph should include a statement such as:

"My examination included a review of the actuarial assumptions and actuarial methods and of the underlying basic asset and liability records and tests of the actuarial calculations I considered necessary. I also reconciled the underlying basic asset and liability records to [exhibits and schedules listed as applicable] of the company's current annual statement."

E. If the appointed actuary has not examined the underlying records, but has relied upon data, for example, listings and summaries of policies in force or asset records, prepared by the company, the reliance paragraph should include a statement such as:

"In forming my opinion on [specify types of reserves], I relied upon data prepared by [name and title of company officer certifying in force records or other data] as certified in the attached statements. I evaluated that data for reasonableness and consistency. I also reconciled that data to [exhibits and schedules to be listed as applicable] of the company's current annual statement. In other respects, my examination included review of the actuarial assumptions and actuarial methods used and tests of the calculations I considered necessary."

The section must be accompanied by a statement by each person relied upon in the form prescribed by subpart 5.

F. The opinion paragraph should include a statement such as:

"In my opinion the reserves and related actuarial values concerning the statement items identified above:

(1) are computed in accordance with presently accepted actuarial standards consistently applied and are fairly stated, in accordance with sound actuarial principles;

(2) are based on actuarial assumptions that produce reserves at least as great as those called for in any contract provision as to reserve basis and method, and are in accordance with all other contract provisions;

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(3) meet the requirements of the Insurance Law and regulations of the state of [state of domicile], and are at least as great as the minimum aggregate amounts required by the state in which this statement is filed;

(4) are computed on the basis of assumptions consistent with those used in computing the corresponding items in the annual statement of the preceding year-end (with any exceptions noted below); and

(5) include provision for all actuarial reserves and related statement items which ought to be established.

The reserves and related items, when considered in light of the assets held by the company with respect to such reserves and related actuarial items including, but not limited to, the investment earnings on the assets, and the considerations anticipated to be received and retained under the policies and contracts, make adequate provision, according to presently accepted actuarial standards of practice, for the anticipated cash flows required by the contractual obligations and related expenses of the company. (At the discretion of the commissioner, this language may be omitted for an opinion filed on behalf of a company doing business only in this state and in no other state.)

The actuarial methods, considerations, and analyses used in forming my opinion conform to the appropriate Standards of Practice as promulgated by the Actuarial Standards Board, which standards form the basis of this statement of opinion.

This opinion is updated annually as required by statute. To the best of my knowledge, there have been no material changes from the applicable date of the annual statement to the date of the rendering of this opinion which should be considered in reviewing this opinion.

or

The following material changes which occurred between the date of the statement for which this opinion is applicable and the date of this opinion should be considered in reviewing this opinion: (Describe the change or changes.)

Note: Choose one of the above two paragraphs, whichever is applicable.

The impact of unanticipated events subsequent to the date of this opinion is beyond the scope of this opinion. The analysis of the asset adequacy portion of this opinion should be viewed recognizing that the company's future experience may not follow all the assumptions used in the analysis.

Signature of Appointed Actuary

Address of Appointed Actuary

Telephone Number of Appointed Actuary

Date"

Subp. 3. **Assumptions for new issues.** The adoption for new issues or new claims or other new liabilities of an actuarial assumption that differs from a corresponding assumption used for prior new issues or new claims or other new liabilities is not a change in actuarial assumptions within the meaning of this part.

Subp. 4. **Adverse opinions.** If the appointed actuary is unable to form an opinion, then the actuary shall refuse to issue a Statement of Actuarial Opinion. If the appointed actuary's opinion is adverse or qualified, then the actuary shall issue an adverse or qualified actuarial

opinion explicitly stating the reasons for the opinion. This statement should follow the scope paragraph and precede the opinion paragraph.

Subp. 5. **Reliance on information furnished by other persons.** If the appointed actuary relies on the certification of others on matters concerning the accuracy or completeness of any data underlying the actuarial opinion, or the appropriateness of any other information used by the appointed actuary in forming the actuarial opinion, the actuarial opinion should indicate the persons the actuary is relying upon and a precise identification of the items subject to reliance. In addition, the persons on whom the appointed actuary relies shall provide a certification that precisely identifies the items on which the person is providing information and a statement as to the accuracy, completeness, or reasonableness, as applicable, of the items. This certification must include the signature, title, company, address, and telephone number of the person rendering the certification, as well as the date on which it is signed.

Subp. 6. **Alternate option.**

A. Minnesota Statutes, section 61A.25, gives the commissioner broad authority to accept the valuation of a foreign insurer when that valuation meets the requirements applicable to a company domiciled in this state in the aggregate. As an alternative to the requirements of subpart 2, item F, subitem (3), the commissioner may make one or more of the following additional approaches available to the opining actuary:

(1) A statement that the reserves "meet the requirements of the insurance laws and regulations of the state of [state of domicile] and the formal written standards and conditions of this state for filing an opinion based on the law of the state of domicile." If the commissioner chooses to allow this alternative, a formal written list of standards and conditions must be made available. If a company chooses to use this alternative, the standards and conditions in effect on July 1 of a calendar year apply to statements for that calendar year, and they remain in effect until they are revised or revoked. If no list is available, this alternative is not available.

(2) A statement that the reserves "meet the requirements of the insurance laws and regulations of the state of [state of domicile] and I have verified that the company's request to file an opinion based on the law of the state of domicile has been approved and that any conditions required by the commissioner for approval of that request have been met." If the commissioner chooses to allow this alternative, a formal written statement of the allowance shall be issued no later than March 31 of the year it is first effective. It shall remain valid until rescinded or modified by the commissioner. The rescission or modifications shall be issued no later than March 31 of the year they are first effective. Subsequent to that statement being issued, if a company chooses to use this alternative, the company shall file a request to do so, along with justification for its use, no later than April 30 of the year of the opinion to be filed. The request shall be deemed approved on October 1 of that year if the commissioner has not denied the request by that date.

(3) A statement that the reserves "meet the requirements of the insurance laws and regulations of the state of [state of domicile] and I have submitted the required comparison as specified by this state."

(a) If the commissioner chooses to allow this alternative, a formal written list of products, to be added to the table in unit (b), for which the required comparison must be provided will be published. If a company chooses to use this alternative, the list in effect on July 1 of a calendar year must apply to statements for that calendar year, and it remains in effect until it is revised or revoked. If no list is available, this alternative is not available.

(b) If a company desires to use this alternative, the appointed actuary shall provide a comparison of the gross nationwide reserves held to the gross nationwide reserves that would be held under codification standards of the National Association of Insurance Commissioners. Gross nationwide reserves are the total reserves calculated for the total company in force business directly sold and assumed, indifferent to the state in

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which the risk resides, without reduction for reinsurance ceded. The information provided must be at least:

(1) Product Type	(2) Death Benefit or Account Value	(3) Reserves Held	(4) Codification Reserves	(5) Codification Standards

(c) The information listed must include all products identified by either the state of filing or any other states subscribing to this alternative.

(d) If there is no codification standard for the type of product or risk in force or if the codification standard does not directly address the type of product or risk in force, the appointed actuary shall provide detailed disclosure of the specific method and assumptions used in determining the reserves held.

(e) The comparison provided by the company is to be kept confidential to the same extent and under the same conditions as the actuarial memorandum.

B. Notwithstanding item A, the commissioner may reject an opinion based on the laws and regulations of the state of domicile and require an opinion based on the laws of this state. If a company is unable to provide the opinion within 60 days of the request or other period of time determined by the commissioner after consultation with the company, the commissioner may contract an independent actuary at the company's expense to prepare and file the opinion.

Statutory Authority: *MS s 45.023; 61A.25*

History: *37 SR 1455*

2711.0240 DESCRIPTION OF ACTUARIAL MEMORANDUM INCLUDING AN ASSET ADEQUACY ANALYSIS AND REGULATORY ASSET ADEQUACY ISSUES SUMMARY.

Subpart 1. Generally.

A. In accordance with Minnesota Statutes, section 61A.25, subdivision 2a, the appointed actuary shall prepare a memorandum to the company describing the analysis done in support of the actuary's opinion regarding the reserves. The memorandum must be made available for examination by the commissioner upon request but must be returned to the company after examination and must not be considered a record of the Department of Commerce or subject to automatic filing with the commissioner.

B. In preparing the memorandum, the appointed actuary may rely on, and include as a part of the actuary's own memorandum, memoranda prepared and signed by other actuaries who are qualified within the meaning of part 2711.0220, subpart 2, with respect to the areas covered in such memoranda, and so state in the memoranda.

C. If the commissioner requests a memorandum and no memorandum exists or if the commissioner finds that the analysis described in the memorandum fails to meet the standards of the Actuarial Standards Board or the standards and requirements of this chapter, the commissioner may designate a qualified actuary to review the opinion and prepare such supporting memorandum as is required for review. The reasonable and necessary expense of the independent review must be paid by the company but must be directed and controlled by the commissioner.

D. The reviewing actuary has the same status as an examiner for purposes of obtaining data from the company and the work papers and documentation of the reviewing actuary must be retained by the commissioner; provided, however, that any information provided by the company to the reviewing actuary and included in the work papers is considered material provided by the company to the commissioner and must be kept confidential to the same extent as is prescribed by law with respect to other material provided by the

company to the commissioner pursuant to the statutes governing this chapter. The reviewing actuary must not be an employee of a consulting firm involved with the preparation of any prior memorandum or opinion for the insurer pursuant to this chapter for any one of the current year or the preceding three years.

E. In accordance with Minnesota Statutes, section 61A.25, subdivision 2a, the appointed actuary shall prepare a regulatory asset adequacy issues summary, the contents of which are specified in subpart 3. The regulatory asset adequacy issues summary must be submitted no later than March 15 of the year following the year for which a Statement of Actuarial Opinion based on asset adequacy is required. The regulatory asset adequacy issues summary is to be kept confidential to the same extent and under the same conditions as the actuarial memorandum.

Subp. 2. Details of the memorandum section documenting asset adequacy analysis. When an actuarial opinion is provided, the memorandum must demonstrate that the analysis has been done in accordance with the standards for asset adequacy referred to in part 2711.0220, subpart 4, and any additional standards under this chapter. It must specify:

A. for reserves:

- (1) product descriptions including market description, underwriting, and other aspects of a risk profile and the specific risks the appointed actuary deems significant;
- (2) source of liability in force;
- (3) reserve method and basis;
- (4) investment reserves;
- (5) reinsurance arrangements;
- (6) identification of any explicit or implied guarantees made by the general account in support of benefits provided through a separate account or under a separate account policy or contract and the methods used by the appointed actuary to provide for the guarantees in the asset adequacy analysis; and
- (7) documentation of assumptions to test reserves for the following:
 - (a) lapse rates, both base and excess;
 - (b) interest crediting rate strategy;
 - (c) mortality;
 - (d) policyholder dividend strategy;
 - (e) competitor or market interest rate;
 - (f) annuitization rates;
 - (g) commissions and expenses; and
 - (h) morbidity.

The documentation of the assumptions must be such that an actuary reviewing the actuarial memorandum could form a conclusion as to the reasonableness of the assumptions;

B. for assets:

- (1) portfolio descriptions, including a risk profile disclosing the quality, distribution, and types of assets;
- (2) investment and disinvestment assumptions;
- (3) source of asset data;
- (4) asset valuation bases; and
- (5) documentation of assumptions made for:
 - (a) default costs;
 - (b) bond call function;
 - (c) mortgage prepayment function;

(d) determining market value for assets sold due to disinvestment strategy; and

(e) determining yield on assets acquired through the investment strategy.

The documentation of the assumptions must be such that an actuary reviewing the actuarial memorandum could form a conclusion as to the reasonableness of the assumptions;

C. for the analysis basis:

(1) methodology;

(2) rationale for inclusion or exclusion of different blocks of business and how pertinent risks were analyzed;

(3) rationale for degree of rigor in analyzing different blocks of business (include in the rationale the level of "materiality" that was used in determining how rigorously to analyze different blocks of business);

(4) criteria for determining asset adequacy (include in the criteria the precise basis for determining if assets are adequate to cover reserves under "moderately adverse conditions" or other conditions as specified in relevant actuarial standards of practice); and

(5) whether the impact of federal income taxes was considered and the method of treating reinsurance in the asset adequacy analysis;

D. summary of material changes in methods, procedures, or assumptions from prior year's asset adequacy analysis;

E. summary of results; and

F. conclusions.

Subp. 3. Details of the regulatory asset adequacy issues summary.

A. The regulatory asset adequacy issues summary must include:

(1) descriptions of the scenarios tested, including whether those scenarios are stochastic or deterministic, and the sensitivity testing done relative to those scenarios. If negative ending surplus results under certain tests in the aggregate, the actuary should describe those tests and the amount of additional reserve as of the valuation date which, if held, would eliminate the negative aggregate surplus values. Ending surplus values must be determined by either extending the projection period until the in-force and associated assets and liabilities at the end of the projection period are immaterial or by adjusting the surplus amount at the end of the projection period by an amount that appropriately estimates the value that can reasonably be expected to arise from the assets and liabilities remaining in force;

(2) the extent to which the appointed actuary uses assumptions in the asset adequacy analysis that are materially different than the assumptions used in the previous asset adequacy analysis;

(3) the amount of reserves and the identity of the product lines that had been subjected to asset adequacy analysis in the prior opinion but were not subject to analysis for the current opinion;

(4) comments on any interim results that may be of significant concern to the appointed actuary. For example, the impact of the insufficiency of assets to support the payment of benefits and expenses and the establishment of statutory reserves during one or more interim periods;

(5) the methods used by the actuary to recognize the impact of reinsurance on the company's cash flows, including both assets and liabilities, under each of the scenarios tested; and

(6) whether the actuary has been satisfied that all options, whether explicit or embedded, in any asset or liability, including but not limited to those affecting cash flows embedded in fixed income securities, and equity-like features in any investments have been appropriately considered in the asset adequacy analysis.

B. The regulatory asset adequacy issues summary must contain the name of the company for which the regulatory asset adequacy issues summary is being supplied and must be signed and dated by the appointed actuary rendering the actuarial opinion.

Subp. 4. **Conformity to standards of practice.** The memorandum must include a statement:

"Actuarial methods, considerations, and analyses used in the preparation of this memorandum conform to the appropriate Standards of Practice as promulgated by the Actuarial Standards Board, which standards form the basis for this memorandum."

Subp. 5. **Use of assets supporting interest maintenance reserve and asset valuation reserve.** An appropriate allocation of assets in the amount of the interest maintenance reserve (IMR), whether positive or negative, shall be used in any asset adequacy analysis. Analysis of risks regarding asset default may include an appropriate allocation of assets supporting the asset valuation reserve (AVR). The AVR assets may not be applied for any other risks with respect to reserve adequacy. Analysis of these and other risks may include assets supporting other mandatory or voluntary reserves available to the extent not used for risk analysis and reserve support.

The amount of the assets used for the AVR must be disclosed in the table of reserves and liabilities of the opinion and in the memorandum. The method used for selecting particular assets or allocated portions of assets must be disclosed in the memorandum.

Subp. 6. **Required interest scenarios.** For the purpose of performing the asset adequacy analysis required by this chapter, the qualified actuary shall follow standards adopted by the Actuarial Standards Board; nevertheless, the appointed actuary must consider in the analysis the effect of at least the following interest rate scenarios:

- A. level with no deviation;
 - B. uniformly increasing over ten years at one-half percent per year and then level;
 - C. uniformly increasing at one percent per year over five years and then uniformly decreasing at one percent per year to the original level at the end of ten years and then level;
 - D. an immediate increase of three percent and then level;
 - E. uniformly decreasing over ten years at one-half percent per year and then level;
 - F. uniformly decreasing at one percent per year over five years and then uniformly increasing at one percent per year to the original level at the end of ten years and then level;
- and
- G. an immediate decrease of three percent and then level.

For these and other scenarios which may be used, projected interest rates for a five-year treasury note need not be reduced beyond the point where such five-year treasury note yield would be at 50 percent of its initial level.

The beginning interest rates may be based on interest rates for new investments as of the valuation date similar to recent investments allocated to support the product being tested or be based on an outside index, such as treasury yields, of assets of the appropriate length on a date close to the valuation date. Whatever method is used to determine the beginning yield curve and associated interest rates should be specifically defined. The beginning yield curve and associated interest rates should be consistent for all interest rate scenarios.

Subp. 7. **Documentation.** The appointed actuary shall retain on file, for at least seven years, sufficient documentation so that it will be possible to determine the procedures followed, the analyses performed, the bases for assumptions, and the results obtained.

Statutory Authority: *MS s 45.023; 61A.25*

History: *37 SR 1455*