***Reserving Risk: Actual losses or other contractual payments reflected in reported reserves or other liabilities will be greater than estimated.***

The Reserving Risk Assessment is focused primarily on two key aspects of reserving: 1) reserve valuation; and 2) reserve adequacy. Analysis of reserves relies heavily on the review of the Statement of Actuarial Opinion (SAO) and other related filings. In analyzing reserving risk, the analyst may analyze specific types of reserves established by life insurers, reserving methodologies and various aspects of life insurance that affect reserving. For example, an analyst’s risk-focused assessment of reserving risk may consider the following areas (but not limited to):

* Reserve valuation in accordance with the appropriate valuation requirements.
* Reasonableness of valuation bases utilized, testing, assumptions, and methodologies to determine reserves.
* Adequacy of assets to support policyholder benefits.
* Appropriate reporting of reserves.
* Lines of business written by the insurer.
* Types of reserves for life, accident, and health (A&H) and annuity lines of business.
* Reserve development.
* Reinsurance.
* Reserving for guarantees on separate accounts.

**Statement of Actuarial Opinion Based on an Asset Adequacy Analysis**

To assess reserving risk, consider procedures for reviewing the Actuarial Opinion and other actuarial filings for compliance and assessment of risks. In many states, the Actuarial Opinion and related filings are reviewed by actuarial staff. Whether the SAO review is performed by the analyst or the actuary, the risk assessment provides for the results of the SAO review to be documented and communicated to the analyst.

***Refer to the Overview sections at the end of this chapter for more guidance on the SAO and Asset Adequacy Analysis.***

***Procedures #1a and #1b.***Determine that the SAO was prepared by a qualified actuary and that the reserve amounts agree with the Annual Financial Statement.

***Procedures #1c–#1f.***Determine that the insurer’s policy reserves were calculated properly in accordance with the minimum standards required by the NAIC Model Standard Valuation Law, and that the insurer’s assets will adequately support the insurer’s future policy obligations. The qualified actuary’s opinion that the insurer’s assets are adequate with regard to policy reserves provides significant comfort to the analyst that policy obligations will be met in the future.

**RAAIS and Actuarial Memorandum Worksheet**

***Procedures #2 and #3.***Review the RAAIS and document any concerns noted. For example, the analyst should further review any comments made by the appointed actuary on any interim results that may be of significant concern.

Additional prospective risk procedures the analyst may consider performing are provided if concerns exist based on the review of the RAAIS. The analyst should take into consideration the current economic environment (i.e., interest rate trends) when performing the analysis.

***Procedure #4.***Review the actuarial memorandum that supports the SAO. The actuarial memorandum is a comprehensive document that provides an understanding of the insurer’s reserves, the assets available to support the reserves, and the projected impact on the insurer’s financial condition of varying economic and interest rate projection scenarios. It is not automatically filed with the Annual Financial Statement but is provided to the regulator only upon request. The decision as to whether to request the actuarial memorandum is an important one. The actuarial memorandum should be requested for insurers with known financial problems, significant changes in product mix or investment strategy, or significant growth in a particular product line.

The RAAIS is filed with the Annual Financial Statement and is designed to assist the regulatory actuary in determining whether to request the actuarial memorandum. The RAAIS includes the eight data requests shown below. Note that some items, such as 1), 2) and 5) specifically refer to cash flow testing results.

1. The number of additional interest rate scenarios that were tested identifying separately the number of deterministic scenarios and stochastic scenarios. Also identify the number of such scenarios which produced ending negative surplus values on market value basis.
2. If sensitivity testing was performed, identify the assumptions tested and describe the variation in ending surplus values on a market value basis from the base case values.
3. If negative ending surplus results under certain tests in the aggregate, the amount of additional reserve which, if held, would eliminate the aggregate negative ending surplus values.
4. The extent to which the appointed actuary uses assumptions in the asset adequacy analysis which are materially different than the assumptions used in the previous asset adequacy analysis.
5. The amount of reserves and the identity of the product lines which have been subject to asset adequacy analysis in the prior opinion but were not subject to such analysis for the current opinion.
6. Comments should be provided on any interim results that may be of significant concern to the appointed actuary.
7. 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.
8. Whether the actuary has verified that all options embedded in fixed income securities and equity-like features in any investments have been appropriately considered in the asset adequacy analysis.

While most states do not require the New York 7 actuarial interest rate scenario tests, states do require other stochastic scenario tests for life insurers and many life insurers, even though not required, still run the New York 7 interest rate scenario tests. The New York 7 interest rate scenario test which is an immediate decrease of 3% and then level would highlight the impact of prolonged low interest rates given the current interest rate environment. Also, the stochastically generated interest rate scenarios will also likely contain an interest rate scenario that represents a prolonged low-interest rate environment.

The Department actuary and analyst should understand each scenario in the insurer’s scenario testing and its limitations and assess the likelihood of each scenario in the current economic environment. For example, the New York 7 interest rate scenarios consist of the following scenarios:

* Level with no deviation.
* Uniformity increasing over 10 years at 0.5% per year and then level.
* Uniformity increasing at 1% per year over five years and then uniformly decreasing at 1% per year to the original level at the end of the 10 years and then level.
* An immediate increase of 3% and then level.
* Uniformly decreasing over 10 years at 0.5% per year and then level.
* Uniformly decreasing at 1% per year over five years and then uniformly increasing at 1% per year to the original level at the end of 10 years and then level. An immediate decrease of 3% and then level.

Procedures 4.f. asks the analyst if an insurer that is within the scope of AG-53 has filed the required reporting within the AOMR. Further guidance on that reporting is provided below in procedure #5.

***Procedure #5.*** Document any concerns based on the review of the actuarial memorandum. Additional procedures the analyst may consider performing are provided if additional concerns exist based on the review of the RAAIS, the actuarial memorandum and the asset adequacy testing performed. The procedures should be used to help identify how the insurer will fund a negative cash flow. Procedures 5.a. through 5.d. are applicable to insurers utilizing the New York 7 actuarial interest rate scenario tests. Procedure 5.e. is applicable to other cash flow scenario testing. Explanations of negative cash flow provided by the appointed actuary should explain how the insurer will: 1) sell marketable assets and which type; or 2) borrow, with an explanation of any existing agreements to include security, duration and notice period required. If the appointed actuary wrote in his/her report that the insurer expects to sell assets, the modeling should be consistent for the sale of assets. Likewise, if the appointed actuary wrote that the insurer expects to borrow, then the modeling should be consistent with borrowing. If the insurer expects to borrow, the analyst should consider asking the insurer if a formal Lending Agreement is in place.

Procedure 5.f. is applicable to AG-53 reporting on high-yield complex assets. Refer to the guidance above regarding the scope of which insurers are included in this reporting requirement. In line with the goals of AG-53 to provide uniform guidance and clarification of requirements for the appropriate support of certain assumptions for asset adequacy analysis performed by life insurers, the analyst or reviewing state actuary, should consider if the reporting identifies any concerns, including the following examples that may warrant further investigation or follow-up with the insurer.

1. Reserve adequacy and claims-paying ability in moderately adverse conditions, including conditions negatively impacting cash flows from complex assets.
2. Rationale supporting changes in assumptions, year-over-year.
3. Expected gross returns and related risks (including default rates).
4. Factors supporting margins on asset-related assumptions.
5. That assumptions fit reasonably within the risk-return spectrum.
6. The extent to which high-yielding assets are supporting major product categories.
7. Sensitivity testing results regarding reinvested complex assets supporting life insurer business.
8. Identifies expectations in practice regarding the valuation of complex assets within asset adequacy analysis.
9. Investment fee income relationships with affiliated entities or entities close to the company.

**Non-Guaranteed Elements Opinion (if applicable)**

***Procedure #6.*** Determine that a qualified actuary prepared the non-guaranteed elements opinion.

***Procedures #6b and #6c.***Review the non-guaranteed elements opinion in order to determine that the insurer’s reserves were determined in a manner that considered the non-guaranteed elements for individual life and annuities policies.

**General Guidance**

The Annual Reserve Risk Assessment Procedures are designed to identify potential areas of concern to the analyst. While the underlying actuarial techniques relating to life reserves are quite complicated, the analyst should remember that there are two basic objectives regarding life reserves. The first objective is that the insurer’s life reserves are calculated using the appropriate valuation methodology (formula or principle-based), and the second objective is that the insurer’s assets are adequate to support the future policy obligations. To meet the first objective, reserves for policies and contracts subject to the formula-based valuation methodology, including the formula reserves required by VM-20, should be calculated in accordance with the minimum formula statutory valuation standards, using the appropriate valuation assumptions and valuation methods. For policies and contracts subject to a principle-based valuation methodology, in addition to the formula reserves, reserves should be calculated in accordance with the principle-based valuation requirements of VM-20.

To assess reserve risk consider the quantitative and qualitative data, benchmarks, and procedures in this chapter. . The repository is not an all-inclusive list of possible procedures. Therefore, risks identified for which no procedure is available should be analyzed by the state insurance department based on the nature and scope of the risk.

The placement of the following data and procedures in the reserving risk repository is based on “best fit.” Analysts should use their professional judgement in categorizing risks when documenting financial determinations of the analysis. Key insurance operations/activities or lines of business, for example, may have related risks addressed in different risk categories. Therefore, the analyst may need to review other risks in conjunction with reserves. For example:

* Reserves are also addressed in the Actuarial Opinion Worksheet.
* Separate Accounts are also addressed in the Operations and Liquidity Risks.
* Surrender activity is also addressed in the Liquidity Risk.

In conducting your analysis, utilize available tools in iSite+ such as financial profile reports, dashboards, investment snapshots, jumpstart reports, and other industry aggregated analysis. Consider also external tools such as rating agency reports, industry reports, and publicly available insurer information.

Analysts are not expected to document every procedure, data or benchmark result. Rather, analysts and supervisors should use their expertise, knowledge of the insurer and professional judgement to tailor the analysis to address the specific risks of the insurer and document the applicable details within the analysis.

Results of risk analysis should be documented in the Section III: Risk Assessment of the insurer. Documentation of the risk assessment analysis should be sufficiently robust to explain the risks and reflect the strengths and weaknesses of the insurer.

Analyst should complete their reserve risk assessment in conjunction with:

* A review of the Supervisory Plan and Insurer Profile Summary and the prior period analysis.
* Communication with the company.
* Communication and/or coordination with other internal departments.

The analyst should also consider the insurer’s corporate governance which includes the assessment of the risk environment facing the insurer in order to identify current or prospective solvency risks, oversight provided by the board of directors and the effectiveness of management, including the code of conduct established by the board.

**Involvement of an Actuary:** The analyst should involve an actuary where indicated in the procedures or as needed. To stay within any required deadlines for reviews, the analyst should document any greater in-depth reviews being performed by the actuary (such as involving the confidential actuarial memorandum or the confidential principle-based reserving (PBR) report for life reserves) and supplement the documentation when such actuarial review is complete. Questions or requests for assistance regarding PBR and for asset adequacy analysis may be made to the NAIC actuarial resources. Please see the NAIC website for the Valuation Analysis (E) Working Group for contact information regarding the use of NAIC actuarial resources and use of the Working Group if needed.

**Depth of Review:** Life, annuity, PBR and accident and health (A&H) involve many products and complex requirements. A complete determination of compliance with all of these requirements during the course of an annual financial analysis review is typically not practical for many companies. Judgment in a risk-focused approach will need to be exercised regarding greater focus and use of actuarial expertise in any procedure provided below.

**ANNUAL Reserving Risk Assessment**

***Refer to the Overview sections at the end of this chapter for more guidance on Life, Annuity, A&H and Long-Term Care reserves.***

**Inappropriate or Inaccurate Valuation of Life Reserves**

**Reasonableness of Actuarial Methodologies and Assumptions**

* **High Expenses affecting Cash Flow Assumptions**
* **Potential for Understated Life Reserves due to Spread Analysis**

Determine whether the insurer’s life reserves for policies and contracts subject to a formula-based valuation methodology are valued in accordance with the minimum formula statutory valuation standards. Risks include that reserves may be understated due to reserve computations that are not performed correctly; assumptions that are unreasonable or not compliant with minimum requirements; high expenses leading to cash flow deficiencies; or, spread analysis that indicates either the need to record additional asset adequacy reserves (asset liability matching (ALM)), changes to policy design to limit guaranteed returns, or potential for investment portfolio changes to improve returns. In this regard, the analyst must rely, to a large extent, on the opinion provided by the qualified actuary, the information provided in the actuarial memorandum documenting all of the asset and liability assumptions, and the methods used, and scenarios run to determine the reserve adequacy.

Qualitative and Additional Review Considerations

* Review the results of the Statement of Actuarial Opinion worksheet. Identify any concerns regarding the valuation of the insurer’s reserves in accordance with minimum statutory valuation standards.
* Review the Notes to Financial Statements, Note #31 – Reserves for Life Contracts and Annuity Contracts and note any unusual items regarding the valuation of life reserves.
* Review the trends of reserve amounts for the various basis groupings in Exhibit 5 over recent annual statements. Contact the state insurance department’s actuary or other actuarial resource for assistance with this analysis.
* If questions or concerns are noted, contact the state insurance department’s actuary or other actuarial resource to discuss the nature and scope of the life reserve valuation procedures performed.
* Assess the lines of business written by the insurer and gaining an understanding of the impact that the difference in types of plans may have on reserving assumptions and methodologies.
* Through the analyst’s interdepartmental communication with the policy forms department, inquire as to whether the insurer had any new and unusual policy forms approved during the past 12 months by either the department or Interstate Insurance Product Regulation Commission (IIPRC). Unusual filings could be product lines the company has not written before or contain new or innovative products or benefit designs.
* If concerns are noted about the types of life policies written, review the insurer’s life insurance plan descriptions and/or policy forms to better understand the types of plans offered and the specific policy features and benefits.
* If questions or concerns are noted, contact the state insurance department’s actuary for assistance in completing the analysis.
* If concerns are noted, consider a target examination of reserves in which the field examination staff request a valuation listing by plan and issue year, and test a sample of individual policy reserves from each of the major life insurance plans for accuracy.
* In considering any limited scope examination or any analysis needed, the analyst may consider use of the state’s equivalent authority to the NAIC Standard Valuation Law (#820), Section 11F, which provides the commissioner may engage a qualified actuary at the expense of the company to perform an actuarial examination of the company and opine on the appropriateness of any reserve assumption or method used by the company, or to review and opine on a company’s compliance with any requirement set forth in Model #820.

Determine whether any changes in life reserve valuation bases during the year were proper for policies and contracts. From time to time, an insurer may decide to change the valuation basis for a particular segment of the business. The insurer may change the valuation mortality table used, the valuation rate of interest or the valuation method. Reserve strengthening occurs when the insurer substitutes a more conservative basis of valuation for any given block of business. Reserve weakening may also occur but normally requires approval of the domiciliary state and reserves cannot be reduced below the minimum reserve standard as defined in the Standard Valuation Law.

The analyst may also consider performing procedures that involve testing the actual reserve calculations for a sampling of individual life insurance policies to ensure that the minimum statutory valuation standards have been met.

Procedures / Data

* Has been a weakening of reserves resulting from a change in the basis of valuation during the year that resulted in an increase in the current year capital and surplus. [Annual Financial Statement, Exhibit 5A]

Qualitative and Additional Review Considerations

* Review the specific changes in valuation bases applied to life products noted in Annual Financial Statement, Exhibit 5A, and determine that individual changes in specific mortality tables, interest rates, or valuation methods meet the minimum statutory valuation standards.
* Identify if any changes in life reserve valuation bases did not receive appropriate regulatory approval, if required.
* Request from the insurer information regarding the reason for the change in valuation basis.

**Inappropriate or Inaccurate Valuation of PBR Life Reserves**

**Accuracy of PBR Reserve (or Exemption) Computations**

**Reasonableness of PBR Methodologies and Assumptions**

Determine whether the insurer’s life reserves for policies and contracts subject to a principle-based valuation methodology appear to be valued in accordance with the requirements of VM-20. Risks include that reserves may be understated due to reserve computations that are not performed correctly or due to assumptions that are unreasonable or not compliant with minimum requirements; or, that exemption test are not computed correctly, resulting in inaccurate exemptions. In this regard, the analyst will need to review and rely on the VM-31, PBR Actuarial Report Requirements for Business Subject to a Principle-Based Reserve Valuation, actuarial report that documents the deterministic and stochastic exemption tests, all company experience assumptions and margins, and all the procedures and processes used to calculate the reserves under a principle-based valuation methodology. In addition, the analyst will need to review the VM-20 supplement, which is part of the annual statement filing and contains the various components of the PBR. The analyst may seek the assistance of actuarial staff at the NAIC related to any verification of exclusion test calculations, as well as validation of PBR for a small random sample of policies and contracts subject to a principle-based valuation methodology.Please see the NAIC website for the Valuation Analysis (E) Working Group for contact information regarding the use of NAIC actuarial resources and use of the Working Group if needed.

Qualitative and Additional Review Considerations

* Review Section 1 of the VM-20 Supplement to the annual statement for the business PBR and the resulting reported PBR reserves. Consider the business PBR was applied with respect to the applicability of PBR provided in the *Valuation Manual* (VM), Section II for products within the scope of VM-20 requirements.
* Review Section 2 of the VM-20 Supplement to determine if the company has chosen to delay implementation of VM-20 requirements per Section II(c) of the VM.
* Review Section 3 of the VM-20 Supplement to the annual statement to determine if the company qualifies for the companywide exemption.
* Based on the judgment of the analyst and after discussing with the department actuary or the NAIC actuarial resources, determine if the VM-31, PBR Report Requirements, report should be requested from the company for review. The state insurance department actuary should perform the following procedures for any VM-31 Actuarial Report to be reviewed. The NAIC actuarial resources may be contacted for any questions or help in this review.
* Review the VM-31 Actuarial Report to identify the insurer’s life insurance plan descriptions to understand the types of plans offered and the specific policy features and benefits.
* Review the VM-31 Actuarial Report to identify valuation assumptions based on company experience and valuation assumptions based on industry experience tables.
* For valuation assumptions based on company experience, contact the company valuation actuary to request to see the latest experience studies for those assumptions and evaluate the process used to establish the assumptions and the margins for those assumptions and the credibility factors used for each experience assumption.
* For mortality based on company experience, review the determination of the credibility percentage, the sufficient data period, the mortality segments, and the industry mortality tables to which company experience mortality is graded. Review whether the level of company mortality experience is appropriate in determining the credibility percentage and the sufficient data period. This is significant as the larger the body of experience used the smaller the resulting mortality margins and the lower the PBR reserves. Review to assure the use of any larger body of aggregate mortality experience is appropriate. As mentioned above, the NAIC actuarial resources may be consulted for any questions or support in this review.
* Review the VM-31 Actuarial Report to determine the contracts or plans that passed the stochastic and deterministic exclusion tests. Consider requesting the assistance of the NAIC actuarial resources to independently verify that such contracts and plans do pass the deterministic and stochastic exclusion tests.
* Consider whether to request that a limited-scope examination (or interim examination procedures) be performed to address concerns by reproducing net premium reserve (NPR) calculations on a sample basis. Reproducing calculations may be conducted by asking the company to calculate NPR reserves for a sample of contracts and plans or requesting the NAIC actuarial resources to recalculate the NPR reserves for the same sample of contracts and plans and compare results. Also consider whether to request the NAIC actuarial resources for help in any testing of the deterministic (DR) and stochastic reserve (SR) if there are unusual relationships between the NPR, DR, and SR.
* In considering any limited scope examination or any analysis needed, the analyst may consider use of the state’s equivalent authority to Model #820, Section 11F, which provides the insurance commissioner may engage a qualified actuary at the expense of the company to perform an actuarial examination of the company and opine on the appropriateness of any reserve assumption or method used by the company, or to review and opine on a company’s compliance with any requirement set forth in this model.

**Understatement of Reserves**

**Insufficient Asset Adequacy**

Determine whether the insurer’s underlying assets are adequate to support the future obligations of its life insurance policies. Risks may include the potential for understated reserves if unusual or specific policy features and benefits are not valued and reserved for correctly; or, if asset adequacy testing results reflect the assets held and may not be sufficient to support future policy obligations. If the insurer filed an SAO based on an asset adequacy analysis, then the SAO itself, and the supporting actuarial memorandum, if requested, can provide the analyst with comfort in this regard. If a SAO that does not include an asset adequacy analysis is filed, the analyst can review net interest spread ratios for insights regarding the relationship of investment income with tabular interest. Insurance Regulatory Information System (IRIS) ratio #11 is included in the procedures as a test of reserve consistency between the current year and the prior year.

The analyst may also consider performing a review of the actuarial memorandum, if available. This will provide the analyst with substantial analyses with regard to asset adequacy. If an actuarial memorandum is not available, the analyst should consider the need to have an independent asset adequacy analysis conducted. Additional procedures regarding the SAO are found in Section III.B.8.d. Additional guidance for new reporting requirements for AG-53 regarding high-yielding complex assets is found above.

Procedures / Data

* Net interest spread on life reserves (net investment income, less tabular interest, divided by average life reserves)
* Change in Asset Mix (IRIS Ratio 11)

Qualitative and Additional Review Considerations

* If the insurer filed a Statement of Actuarial Opinion based on an asset adequacy analysis, review the results of the Actuarial Opinion Assessment, and note any concerns regarding the adequacy of the insurer’s underlying assets to support future life insurance policy obligations.
* Pursuant to the review of the Regulatory Asset Adequacy Issues Summary (RAAIS) in the Actuarial Opinion Assessment, note whether the responses to the questions were satisfactory.
* If concerns still exist upon review of the asset adequacy analysis, discuss with the appointed actuary and the company, and request any additional information or work to be performed to address these concerns. If the insurance commissioner determines that the supporting actuarial memorandum fails to meet the standards prescribed by the Valuation Manual or is otherwise unacceptable to the insurance commissioner, the insurance commissioner may engage a qualified actuary at the expense of the company to review the opinion and basis for the opinion and prepare the supporting actuarial memorandum required by the insurance commissioner. See the state’s equivalent authority to NAIC Model #820, Section 3B(3)(b). This also is noted in the Actuarial Opinion Worksheet.
* Review the Actuarial Guideline 53 reporting relating to assumptions and sensitivity testing for reinvested high-yielding complex assets within the asset adequacy analysis, if applicable. Determine whether concerns exist in meeting asset adequacy requirements. See further guidance in the AOMR procedures and reference guide.

**Understated Reserves Associated with Separate Account Products & Guarantees**

Review and identify situations where separate accounts products may be creating contingent liabilities to the general account that may not be sufficiently reserved for on the general account. This is largely a function of the types of separate accounts products offered by the insurer, and the analyst should rely on general knowledge of the insurer’s products at this stage of the analysis.

The analyst should review disclosures in Separate Accounts General Interrogatories, Analysis of Operations by Line of Business (Page 6), Analysis of Increase in Reserves During the Year (Page 7) and the Notes to the Financial Statements of the general account to gain an understanding of the types of products included in the separate account and the general account guarantees on separate account products, as well as identify any concerns with reserving or asset adequacy that may require additional analysis of actuarial filings. The analyst should gain an understanding of any products in the separate account that contain guarantees that are held in the separate account instead of the general account and the types of guarantees (guaranteed minimum death benefit [GMDB], guaranteed minimum income benefit [GMIB], etc.).

**Exposure to Separate Account Products & Guarantee Liabilities and Accuracy of Separate Account Reserve Liabilities**

Procedures / Data

* Identify if any of the separate accounts have guarantees that are designed to mirror an established index (Annual Financial Statement, Note #35B ).
* Identify if any of the separate accounts have material non-indexed guarantees. [Annual Financial Statement, Note #35B]

Qualitative and Additional Review Considerations

* If material guarantees exist, or if non-insulated products exist, determine whether the assets associated with these products are being invested in accordance with statutory guidelines.
* Review Separate Account General Interrogatory #5 to identify if the insurer reported a material amount of assets in the separate account at amortized cost rather than fair value. If yes, consider additional analysis of actuarial and asset adequacy reporting.
* Review Separate Account Analysis of Operations by Line of Business (Page 5) and Analysis of Increase in Reserves During the Year (Page 6) to identify if any concerns exist regarding the types of products included in the Separate Account and reserving for those products. If yes, consider additional analysis of actuarial and asset adequacy reporting.
* Based upon an overall understanding of the insurer’s separate accounts products, assess if there is evidence that such products may be creating contingent liabilities to the general account with product features such as minimum guaranteed death benefits, minimum guaranteed interest rates, etc.
* If concerns or questions are noted, contact the state insurance department’s actuary or other actuarial resource to discuss the nature and scope of the valuation procedures performed relating to guarantees included with separate accounts products. If determined to be necessary, contact the company’s qualified actuary.
* Determine whether growth in separate accounts appears to be financed through borrowings of the general account and, if so, whether any concerns exist regarding the terms of repayment or collateralization.
* Determine whether the insurer writes any modified guaranteed annuities and, if so, the overall materiality and potential negative impact on the insurer’s general account.
* Through the analyst’s quarterly interdepartmental communication with the policy forms department, inquire as to whether the insurer filed any new and unusual separate account policy forms during the past 12 months.
* If concerns are noted about the types of policies included in separate accounts, review the insurer’s separate accounts plan descriptions and/or policy forms to better understand the types of plans offered and the specific policy features and benefits, particularly minimum guarantees.
* If concerns are noted about reserving for separate accounts, consider a target examination of reserves, request that the field examination staff request a valuation listing by plan and issue year, and test a sample of the individual policy reserves for accuracy.
* Assess if there is any indication of contingent liabilities created by the separate accounts for the general account.
* Assess if separate account assets and liabilities were subject to asset adequacy analysis. If “no,” review the actuarial opinion for an explanation.
* Request from the insurer separate accounts plan descriptions and/or policy forms to better understand the types of plans offered and the specific policy features and benefits, particularly minimum guarantees.
* Request information from the insurer regarding any significant changes in reserve methodologies and assumptions, underwriting practices, case reserving, or claims handling practices with the potential to affect reserve setting.

**Exposure to Maximum Guarantees to the Separate Account**

Qualitative and Additional Review Considerations

* Identify the variable annuity account value - general account. Document the variable annuity account value, percentage of capital and surplus, and percentage of total admitted assets.
* Assess if any separate accounts have collected amounts from the general account within the past five years related to separate account guarantees. [Annual Financial Statement, Separate Account General Interrogatories, #2.2]
	+ If “yes,” identify any concerns regarding the amounts or trend of guarantees paid.
	+ If “yes,” determine if guarantees were appropriately reserved for in the general account.
* Perform an industry peer comparison of the total maximum guarantee and the guaranteed amounts paid by the general account on a company-by-company basis to determine if the amounts appear reasonable.

**Risk of Providing Guarantees While Not Receiving Risk Fees**

Identify if the insurer reports a maximum guarantee exposure amount in Separate Accounts Annual Financial Statement, General Interrogatory #2.2 and guarantees paid in Separate Accounts General Interrogatory #2.3 but does not report risk charges paid in Separate Accounts General Interrogatory #2.6, which indicates the insurer is providing guarantees and may not be receiving a risk fee in return for that guarantee. Note that, while group products require risk charges, there may be no requirements for risk charges on individual products. Also note that in some instances, risk fees may be imbedded in the management fees paid to the general account. The analyst should gain an understanding of how risk fees are reported by the insurer and if concerns exist regarding the risk fees, the analyst should consider requesting additional details from the insurer. Additional procedures assist the analyst in determining that contingent liabilities to the general account of the insurer created by separate accounts assets are properly recorded. Guarantees included with separate accounts products must be recorded as a liability of the general account.

Qualitative and Additional Review Considerations

* Determine if there have been any risk charges paid to the general account related to separate account guarantees. [Annual Financial Statement, Separate Account General Interrogatories, #2.6]
* Determine if the insurer reported maximum guarantees that the general account would provide or pay amounts on guarantees in the current year and report no risk charges to the general account.

**Inappropriate or Inaccurate Valuation of Annuity Reserves**

Determine whether the insurer’s annuity reserves are valued in accordance with the minimum formula statutory valuation standards. In this regard, the analyst must rely, to a large extent, on the opinion provided by the qualified actuary. The analyst can also gain comfort in this regard by evaluating the change in reserves in relation to increases or decreases in premiums during the year.

* Procedures / DataDetermine if anything has occurred since the last reporting period to raise concern that the insurer’s annuity contracts are not valued in accordance with the minimum formula statutory valuation standards.
* Change in individual annuity reserves for the year as a percentage of individual annuity premiums (plus annuity investment income less annuity benefits and other fund withdrawals).
* Change in group annuity reserves as a percentage of group annuity premiums (plus annuity investment income less annuity benefits and other fund withdrawals).

Qualitative and Additional Review Considerations

* Review the results of the Actuarial Opinion assessment. Identify any concerns regarding whether the valuation of the insurer’s reserves is in accordance with minimum statutory valuation standards.
* Review the Annual Financial Statement, Notes to Financial Statements, Note #31 – Reserves for Life Contracts and Annuity Contracts and note any unusual items regarding the valuation of annuity reserves (surrender values promised in excess of the reserve, significant changes in components of reserves, etc.).
* Review the trends of reserve amounts for the various basis groupings in Exhibit 5 over recent Annual Statements. Contact the state insurance department’s actuary or other actuarial resource for assistance with this analysis.
* If questions or concerns are noted, contact the state insurance department’s actuary or other actuarial resource to discuss the nature and scope of the annuity reserve valuation procedures performed. If determined to be necessary, contact the company’s qualified actuary.

Assess information on annuity contract benefits offered that may indicate the impact of type of business, reserving assumptions and methodologies.

* Through the analyst’s quarterly interdepartmental communication with the policy forms department, inquire as to whether the insurer filed new and unusual policy forms during the past 12 months.
* If concerns are noted about the types of policies, review the insurer’s annuity plan descriptions and/or policy forms to better understand the types of plans offered and the specific policy features and benefits.
* If concerns are noted about reserving for annuity products, consider a target examination of reserves, request that the field examination staff request a valuation listing by plan and issue year, and test a sample of individual policy reserves from each of the major annuity plans for accuracy.
* In considering any limited scope examination or any analysis needed, the analyst may consider use of the state’s equivalent authority to Model #820, Section 11F, which provides the insurance commissioner may engage a qualified actuary at the expense of the company to perform an actuarial examination of the company and opine on the appropriateness of any reserve assumption or method used by the company, or to review and opine on a company’s compliance with any requirement set forth in this model.
* Request a spread analysis where the current spread earned is compared to the original pricing spread on the annuity block in question. Products with higher guaranteed minimum interest rates relative to the current interest environment. The state insurance department actuary can assist in this review.

Determine whether any changes in annuity reserve valuation basis during the year were appropriate. From time to time, an insurer may decide to change the valuation basis for a particular segment of the business. The insurer may change the mortality table used, the rate of interest or the valuation method. Reserve strengthening occurs when the insurer substitutes a more conservative basis of valuation for any given block of business. Reserve weakening may also occur but normally requires approval of the domiciliary state.

The analyst may also consider testing the actual reserve calculations for a sampling of individual annuity policies to ensure that the minimum statutory valuation standards have been met.

Procedures / Data

* Note whether there has been a weakening of reserves resulting from a change in the basis of valuation during the year that resulted in an increase in capital and surplus. [Annual Financial Statement, Exhibit 5A – Changes in Bases of Valuation During the Year]

Qualitative and Additional Review Considerations

* Review the specific changes in valuation basis applied to annuity products noted in Annual Financial Statement, Exhibit 5A – Changes in Bases of Valuation During the Year and determine that individual changes in specific mortality tables, interest rates, or valuation methods meet the minimum statutory valuation standards.
* Determine if changes in annuity reserve valuation bases received appropriate regulatory approval, if required.
* Test check the calculations involved in applying a change in valuation basis. Contact the state insurance department’s actuary or other actuarial resource for assistance with this assessment.
* Request from the insurer information regarding the reason for the change in valuation basis.
* Request information from the insurer regarding any significant changes in reserve methodologies and assumptions, underwriting practices, case reserving, or claims handling practices with the potential to affect reserve setting.

**Adequacy of Annuity Reserves (Risk of Understatement of Reserves)**

Determine whether the insurer’s underlying assets are adequate to support the future obligations of its annuity policies. If the insurer filed an SAO based on an asset adequacy analysis, then the actuarial opinion itself, and the supporting actuarial memorandum, if requested, can provide the analyst with comfort in this regard. If an SAO that does not include an asset adequacy analysis is filed, the analyst can review net interest spread ratios for insights regarding the relationship of investment income with tabular interest.

The analyst may also consider a review of the actuarial memorandum, is available, as this will provide the analyst with substantial analyses with regard to asset adequacy. If an actuarial memorandum is not available, the analyst should consider the need to have an independent asset adequacy analysis conducted.

Procedures / Data

* Net interest spread (net investment income, less tabular interest, divided by average annuity reserves) on individual annuity reserves.
* Net interest spread (net investment income, less tabular interest, divided by average annuity reserves) on group annuity reserves.
* Change in Asset Mix (IRIS Ratio 11)

Qualitative and Additional Review Considerations

* If the insurer filed a statement of actuarial opinion based on an asset adequacy analysis, review the results of the Actuarial Opinion Assessment, and note any concerns regarding the adequacy of the insurer’s underlying assets to support future annuity policy obligations. Review the actuary’s comments regarding the analysis performed and conclusions reached.
* If available, or if concerns or questions are noted, request and review the RAAIS, and note whether the responses to the questions were satisfactory.
* If concerns exist upon review of the asset adequacy analysis, conduct an independent asset adequacy analysis.

Identifying other areas of concern with withdrawal and surrenders that may affect annuity reserves. For example, annuities can have a significant impact on the insurer’s liquidity position, particularly significant levels of GICs or amounts subject to withdrawal with minimal or no surrender charge.

Procedures / Data

* Guaranteed interest contracts as percent of capital and surplus
* Annuity benefits, surrenders and other fund withdrawals for individual and group annuities as a percent of capital and surplus.
* Change in annuity benefits, surrenders, and other fund withdrawals for individual and group annuities and deposits, as a percentage of premiums
* Note significant amounts subject to withdrawal without any surrender charge or market value adjustment (i.e., as a percentage of total annuity reserves and deposit liability). [Annual Financial Statement, Notes to Financial Statements, Note #32]

Qualitative and Additional Review Considerations

* Request from the insurer and review the insurer’s annuity plan descriptions and/or policy forms to better understand the types of plans offered and the specific policy withdrawal features and surrender charges.

**Adequacy of A&H Reserves (Risk of Understatement of Reserves / A&H Reserve Deficiency)**

Determine whether an understatement of A&H reserves would be significant to the insurer. The ratios of gross and net A&H reserves to capital and surplus are leverage ratios which are calculated gross and net of reinsurance ceded. The net A&H reserves to capital and surplus ratio indicates the margin of error an insurer has in estimating its A&H reserves. For an insurer with a net A&H reserves to capital and surplus ratio of 300%, a 33% understatement of its A&H reserves would eliminate its entire surplus. In evaluating these leverage ratios, the analyst should also consider the nature of the insurer’s business. For example, an insurer which has written primarily A&H business for many years and has proven that it can manage the business profitably is probably not as risky as an insurer which has just begun writing A&H business, even if both insurers have the same leverage ratio results.

Procedures / Data

* For non-life insurers, the gross A&H reserves to capital and surplus ratio.
* Net A&H reserves to capital and surplus ratio.

Determine whether A&H policies appear to have been adequately reserved and valued in accordance with the minimum formula statutory valuation standards. In this regard, the analyst must rely, to a large extent, on the opinion provided by the qualified actuary. Therefore, the analyst should review the results of the SAO Procedures to determine whether any concerns were noted regarding the valuation of the insurer’s A&H reserves in accordance with Appendix A-010, *Minimum Reserve Standards for Individual and Group Health Insurance Contracts*, of the AP&P Manual.

The analyst might want to contact the qualified actuary who signed the insurer’s SAO to discuss the nature and scope of A&H valuation procedures performed and/or request a copy of the qualified actuary’s actuarial memorandum to review for comments regarding the analysis of A&H reserves performed and the conclusions reached.

Qualitative and Additional Review Considerations

* Review the results of the Actuarial Opinion Assessment. Note any concerns regarding the valuation of the insurer’s reserves and if in accordance with minimum statutory valuation standards.
* Request and review the insurer’s description of the valuation standards used in calculating the additional contract reserves (which is required to be attached to and filed with the Annual Financial Statement) and consider whether the reserve basis, interest rates and methods appear reasonable.
* If questions or concerns are noted, contact the qualified actuary who signed the insurer’s Statement of Actuarial Opinion to discuss the nature and scope of the A&H reserve valuation procedures performed.
* Request from the insurer A&H insurance plan descriptions and/or policy forms to better understand the types of plans offered and the specific features and benefits.

The ratio of A&H reserve deficiency measures the adequacy of A&H reserves established in the prior year. A positive result for this ratio represents additional or “adverse” development on the reserves originally established by the insurer (the amount by which the A&H reserves originally established have proved to be understated based on subsequent activity). Current or prospective reserve deficiency could represent a material impact on the insurer’s capital and surplus. If the insurer’s ratio results consistently show additional development, this could be an indication that the insurer is intentionally understating its A&H reserves. The A&H loss ratio is also reviewed as a part of this procedure. Significant increases in this ratio might be indicative of additional A&H reserves being established due to prior understatements while significant decreases might be indicative of current A&H reserve understatements. Other steps included in this procedure include the review of Exhibit 5A – Changes in Bases of Valuation During the Year, of the Annual Financial Statement to determine whether there has been a change in the valuation basis of the A&H policies during the year which resulted in a decrease in A&H reserves in an amount greater than 5% of capital and surplus.

The analyst may also consider reviewing Annual Financial Statement, Schedule H – Accident and Health Exhibit to determine which A&H lines of business are being written and which A&H lines of business had positive development in reserves during the year.

Procedures / Data

* A&H reserve deficiency ratio.
* Review the Schedule H claims test and note/explain any adverse trend or unusual fluctuation of one-year A&H loss development during the past five years.
* Assess loss ratios as indicators of reserve adequacy.
	+ A&H Loss Ratio
	+ Change in A&H loss ratio from the prior year.

Qualitative and Additional Review Considerations

* Review Annual Financial Statement, Schedule H – Accident and Health Exhibit, and perform the following:
	+ - Determine which A&H lines of business are being written by the insurer.
		- Review Schedule H – Part 3, to determine which A&H lines of business had positive development during the year.
* Review the A&H loss percentage ratio for unusual fluctuations or trends over a multiyear period.
* Compare the A&H loss percentage ratio to the industry average to determine any significant deviations from the industry average.
* Request an explanation from the insurer for any adverse loss development results or adverse trends indicated in the analyst’s review of the Schedule H claims test.
* Request information from the insurer regarding A&H claims paid after year-end that were incurred prior to year-end and test the reasonableness of the year-end claim liabilities established by the insurer.

Consider: 1) reviewing the insurer’s A&H insurance plan descriptions and/or policy forms to better understand the types of plans offered and the specific policy features and benefits; and 2) contacting the policy forms section of the insurance department and inquiring as to whether the insurer has filed any new and unusual A&H policy forms during the past year.

The analyst might also consider requesting that the field examination staff request a valuation listing of A&H reserves by policy and testing a sample of policies to determine that the reserve factors were appropriate and that the reserves were correctly computed. If the adequacy of claim liabilities is a concern, the analyst might want to request information from the insurer regarding claims paid after year-end that were incurred prior to year-end, in order to test the reasonableness of the year-end claim liabilities established by the insurer.

Qualitative and Additional Review Considerations

* Assess information on policy benefits offered that may indicate the impact of type of A&H business on reserving assumptions and methodologies.
	+ Review the Notes to Financial Statements, MD&A, or other correspondence with the insurer and note whether the insurer initiated any internal changes that could impact the reserve estimates.
	+ Through the analyst’s quarterly interdepartmental communication with the policy forms department, inquire as to whether the insurer has filed any new and unusual A&H policy forms during the past year.
	+ If concerns are noted about the types of policies, review the insurer’s A&H insurance plan descriptions and/or policy forms to better understand the types of plans offered and the specific features and benefits.
	+ If concerns are noted about reserving for A&H, consider a target examination of reserves, request that the field examination staff request a valuation listing of A&H policy reserves by policy and test a sample of policies to determine that the reserve factors used were appropriate and that the reserves were correctly computed.

**Adequacy of Long-Term Care LTC Reserves (Risk of Understatement of Reserves)**

Review the LTC Experience Reporting Form of the Annual Financial Statement and the AG 51 reporting filed to the department if the insurer writes LTCI to gain an understanding of the reserve adequacy of the LTCI line of business. If concerns exist, consider requesting additional information as necessary to assess actual vs. projected results, legacy vs. newer blocks of business separately, any recent rate increases and capital support. If the insurer has recently filed for rate increases on LTCI blocks, consider intra-departmental discussion with the rate increase analysis and outcome with the rate review staff (if a different person than the analyst/actuary performing the valuation reserve analysis).

Qualitative and Additional Review Considerations

Review and assess long-term care (LTC) insurance reserves.

* Review the information reported in the LTC Experience Reporting Form of the Annual Financial Statement the Actuarial Guideline-LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves (AG 51) reporting, actuarial memorandum or any other related actuarial information filed to the department and identify any concerns with reserve adequacy of LTC insurance business. Request a department actuary to assist in the review, if available.
	+ - Gain an understanding of the asset adequacy and cash-flow testing for LTCI on a stand-alone basis.
		- Consider any negative development in total LTCI reserve, asset adequacy reserves (if available), active life reserves, disabled lives reserves and premium deficiency reserves over the last five years.
		- Evaluate the appropriateness of investment return assumptions factoring in the status of the current economic and interest rate environment.
* If concerns exist:
	+ - Evaluate actual results vs. original or revised assumptions and financial projections to identify trends and concerns.
		- Consider evaluating legacy blocks of business separately from newer blocks of business.
		- Rate Increases: Obtain and review the following information related to the status of rate increases and reduced benefit options. Consider that some information may be available from rate review staff for recent rate increase filings.
			* Track the progress of rate increases across states where a material amount of business is written.
			* Review projections illustrating the impact of proposed rate increases or reduced benefit options on the company’s future profitability.
			* Determine the extent that future rate increases are included in the amount ($) of reserve offsets, asset adequacy/cash-flow testing and the reasonableness of the assumptions.
			* Consider the impact of historical approvals on the company’s ability to obtain the rate increases presented in the projections. If concerns are identified in this area, obtain and review information on the company’s plans to address these issues.
			* Compare the average percent of rate increases requested to the average approved.
			* Identify the amount of written premium change due to approved rate increases.
		- Regarding the adequacy of internal capital to support the LTCI business, compare the current total LTC reserves (active life and other), net of reinsurance, to the amount of internal capital the company has set aside for LTCI (e.g., internal capital per Own Risk and Solvency Assessment [ORSA] if applicable, or rating agency if higher than internal). If necessary, request information to gain an understanding of the degree of conservatism in such capital assumptions.

**Impact of Changes in Valuation Bases of Reserves**

Review the insurer’s description of the valuation standards used in calculating the additional contract reserves and consider whether the reserve bases, interest rates, and methods used appear reasonable. The insurer’s description of the valuation standards used is required to be attached to the filed Annual Financial Statement.

If there was a change in the valuation basis of A&H policies during the year, the analyst should consider the following: 1) obtaining information regarding the reason for the change in the valuation basis;
2) determining whether the amount of the change in the actuarial reserve as a result of the change in the valuation basis is reasonable; and 3) determining whether the change in the valuation basis was approved by the domiciliary state insurance department, if required.

Assess the impact of changes in valuation bases on reserves.

Procedures / Data

* Note whether there has been a weakening of reserves resulting from a change in the basis of valuation during the year that resulted in an increase in capital and surplus. [Annual Financial Statement, Exhibit 5A]

Qualitative and Additional Review Considerations

* If there was a change in the valuation basis of the A&H policies during the year, consider performing the following:
	+ Obtain information regarding the reason for the change in valuation basis and assess the change in the actuarial reserve.
	+ Determine if changes in A&H reserve valuation bases received appropriate regulatory approval, if required.

**Adequacy of Reserves on Captive (Non-Traditional) Reinsurance**

Review reserve valuation of captive reinsurance transactions. Refer to the guidance in Chapter III.B.9. Strategic Risk Assessment for an explanation of potential risks. Also, for affiliated transactions, refer to the guidance for Form D captive reinsurance transactions in Chapter V.C. Domestic and/or Non-Lead State Analysis for procedures that may have been conducted at the time the transaction was approved.

Qualitative and Additional Review Considerations

If business is ceded to a captive (non-traditional) reinsurer, consider the following procedures.

* Determine the percentage of gross premium written that is ceded to affiliated captive reinsurers (Schedule S, Part 3, Sections 1 and 2) (Utilize Reinsurance Dashboard).
* Review the information provided in the Form D application for compliance with reserve valuation standards for fixed annuities.
* Consider Handbook procedures similar to the procedures required for XXX/AXXX captive reinsurance (III.C. Special Analysis Procedures).
* Within the Actuarial Opinion Memorandum, require the insurer provide the results of cash flow testing and true-up of the statutory sufficiency of the reserve credit taken on gross reserves ceded to the affiliated reinsurer, including appropriate sensitivity tests (e.g., lapse, utilization, combined surrender and utilization, and credit defaults, etc.).
* Consider including confidential disclosure in the Insurer Profile Summary to other state insurance departments if the commissioner approved assets not meeting criteria A–C defined within the *Credit for Reinsurance Model Regulation* (#785) for Funds Withheld.

**Additional Analysis and Follow-Up Procedures**

**Examination Findings**

Consider a review of the recent examination report, summary review memorandum and communication with the examination staff to identify if any reserving risk issues were discovered during the examination.

* If outstanding issues are identified perform follow-up procedures as necessary to address concerns.
* Request that the field examination staff request a valuation listing by plan and issue year and test a sample of the individual policy reserves for accuracy.

**Inquire of the Insurer**

Consider requesting additional information from the insurer if reserving risk concerns exist.

If concerns exist, consider requesting information form the insurer regarding:

* If questions or concerns are noted, contact the insurer to request if the insurer initiated any internal changes that could impact the reserve estimates.
* Request of a copy of the insurer’s business plan and review the insurer’s plans to assess and mitigate reserve risks.
* Request information on who ultimately determines the level of reserves to be booked by the insurer and the board of directors’ role in overseeing the reserving process.
* If filed on an insurance entity basis or if your state is the lead state, review the insurer’s Corporate Governance Annual Disclosure (CGAD) filing to understand and assess the board of director~~’~~s’ role in overseeing the reserving process. If your state is not the lead state, rely on the information provided in the Group Profile Summary (GPS) or provided by the lead state, where the CGAD is filed on a group basis.

**Own Risk and Solvency Assessment(ORSA)**

Obtain and review the latest ORSA Summary Report for the insurer or insurance group (if available) to assist in identifying, assessing and addressing reserving risks faced by the insurer.

If the insurer is required to file an ORSA or is part of a group that is required to file an ORSA,

* Review the ORSA Summary Report analysis conducted by the lead state for any reserving risks that require further monitoring or follow-up.
* Review the ORSA Summary Report analysis conducted by the lead state for any mitigating strategies for existing or prospective reserving risks.

**Holding Company Analysis**

Obtain and review the holding company analysis work completed by the lead state to assist in identifying, assessing and addressing reserving risks that could affect the insurer.

* Review the Holding Company analysis conducted by the lead state for any reserving risks impacting the insurer that require further monitoring or follow-up.
* Review the Holding Company Analysis conducted by the lead state for any mitigating strategies for existing or prospective reserving risks impacting the insurer.

**Quarterly Reserving Risk Assessment**

The quarterly reserving risk are intended to identify significant changes in reserves that have occurred since the prior year Annual Financial Statement or the prior Quarterly Financial Statement.

**Changes in Life Reserves and Reserve Adequacy**

Procedures / Data

Determine changes in life reserves to assess any change in the adequacy of reserves.

* Change in reserve from the prior year-end where the aggregate reserve for life contracts exceeds 10% of capital and surplus.
* Change in any asset categories from the prior year-end. [Quarterly Financial Profile – “Mix of Cash & Invested Assets” section]
* Review, by line of business, the year-to-date direct premiums for the current and prior year quarter and note significant changes in direct premiums for any line of business from the prior year, same quarter. [Quarterly Financial Statement, Exhibit 1]

**Changes in Accident and Health (A&H) Reserves and Reserve Adequacy**

Procedures / Data

Determine changes in accident and health reserves to assess any change in the adequacy of reserves.

* Change in reserve from the prior year-end where the aggregate reserve for A&H contracts exceeds 10% of capital and surplus.
* Change in policy and contract claims from the prior year-end, where the A&H policy and contract claims exceeds 10% of capital and surplus.
* Change in benefits from the prior year, same quarter where the disability benefits and benefits under A&H contracts exceeds 10% of capital and surplus.
* Aggregate reserve for A&H contracts to capital and surplus ratio.
* Review, by line of business, the year-to-date direct premiums for the current and prior year quarter and note significant changes in direct premiums for any line of business from the prior year, same quarter. [Quarterly Financial Statement, Exhibit 1]

**Changes in Annuity Reserves and Reserve Adequacy**

Procedures / Data

Determine changes in annuity reserves to assess any change in the adequacy of reserves.

* Change in liability from the prior year-end where the liability for deposit-type contracts exceeds 3.5% of capital and surplus.
* Change in surrender benefits and other fund withdrawals change from the prior year, same quarter. [Quarterly Financial Statement, Summary of Operations]
* Change in any asset categories from the prior year-end. [Quarterly Financial Profile – “Mix of Cash & Invested Assets” section]
* Review, by line of business, the year-to-date direct premiums and deposit-type contract funds for the current and prior year and note whether direct premiums for any line of business or deposit-type contract funds have changed significantly from the prior year, same quarter. [Quarterly Financial Statement, Exhibit 1]

For additional guidance on individual procedure steps, please see the corresponding annual procedures discussed above.

**Actuarial Opinion and Regulatory Asset Adequacy Issues Summary Assessment (RAAIS) overview**

Life insurers required to file an Annual Financial Statement are also required to file an SAO as a supplement to the Annual Financial Statement. The specific requirements for the SAO are described in the NAIC *Valuation Manual*, VM-30, Actuarial Opinion and Memorandum Requirements (AOMR). The SAO must be issued by an Appointed Actuary. The Appointed Actuary must be a qualified actuary appointed either directly by, or by the authority of, the board of directors through an executive officer of the company other than the qualified actuary. “Qualified actuary” as used herein means a member in good standing of the American Academy of Actuaries, or an individual who has otherwise demonstrated his or her actuarial competence to the satisfaction of the domiciliary state insurance department. Requirements regarding the Appointed Actuary and Qualified Actuary must conform to those prescribed by the *Valuation Manual* authorized by Section 3B of the Standard Valuation Law as amended by the NAIC in December 2009. The Actuarial Opinion should include the general account and the separate accounts.

Life insurers are required to file a comprehensive SAO based on an asset adequacy analysis. The actuarial opinion is supported by an actuarial memorandum. The actuarial memorandum includes the results of the qualified actuary’s asset adequacy analysis. While the SAO must be filed with the Annual Financial Statement, the actuarial memorandum is only provided to the regulator upon request. There is also a confidential executive summary, the RAAIS, filed with the insurance departments. In addition to an actuarial opinion, the insurer must also file a non-guaranteed elements opinion if policies containing non-guaranteed elements are currently being issued or are in-force. The specific requirements for the non-guaranteed elements opinion are described in the NAIC *Annual Financial Statement Instructions for Life, Accident and Health Insurance Companies*.

The SAO must follow the guidelines and standards for statements of actuarial opinion prescribed by the *Valuation Manual* authorized by Section 3B of the Standard Valuation Law as amended by the NAIC in December 2009. The SAO should consist of a paragraph identifying the qualified actuary, a scope section identifying the subjects on which an opinion is to be expressed and describing the scope of the qualified actuary’s work, and an opinion paragraph expressing the qualified actuary’s opinion with respect to such subjects. If there has been a material change in the actuarial assumptions from those previously employed, that change should be described in either the Annual Financial Statement or in a paragraph of the SAO. In addition, the scope paragraph should list those items and amounts to which the qualified actuary is expressing an opinion, including the following from the Annual Financial Statement: 1) aggregate reserves for life contracts (Exhibit 5); 2) aggregate reserves for A&H contracts (Exhibit 6); 3) deposit-type contracts (Exhibit 7); and 4) contract claims – liability end of current year (Exhibit 8, Part 1). If the actuary has not examined the underlying records but has relied upon listings and summaries of policies in force prepared by the company, the scope paragraph should include a sentence to this effect.

The Appointed Actuary must report to the board of directors or the Audit Committee each year on the items within the scope of the SAO. The minutes of the board of directors shall indicate that the Appointed Actuary has presented such information to the board of directors or the Audit Committee. A separate SAO is required for each company filing an Annual Statement. If the qualified actuary is unable to form an opinion, the actuary should issue a statement specifically stating the reason(s) why an opinion cannot be formed. If the qualified actuary’s opinion is adverse or qualified, the actuary should issue an adverse or qualified actuarial opinion specifically stating the reason(s) for such an opinion. An adverse opinion is an actuarial opinion which the Appointed Actuary determines that the reserves and liabilities are not adequate.

**Discussion of Actuarial Opinion Assessment Procedures**

In most instances, proper review and analysis of the SAO will require a greater in-depth knowledge of actuarial science. In order to achieve this as a part of the financial review process, most opinions will be reviewed in detail by the Department’s actuarial staff members. The review should encompass procedures discussed in the next section covering the Actuarial Opinion Assessment for the SAO. Although the analysis of the SAO, Actuarial Memorandum and RAAIS are often performed by the actuarial staff, analysts should have a basic understanding of interest rate risk and should consider reviewing the RAAIS and the New York 7, if available (see below for further discussion), or other stochastic testing results and discussing such results with the Department’s actuary. When risks are identified in the RAAIS or actuarial memorandum, the analysts, examiners, and regulatory actuaries should communicate with each other the risk identified so that an overall understanding of the current and prospective risks of the insurer are documented and considered in the overall prioritization and profile of the insurer.

However, if the Annual Financial Statement is received, a cursory review of the opinion should be performed to identify if any extraordinary item is detailed in the opinion. The primary goal of the Actuarial Opinion Assessment Procedures for the SAO is to determine if a SAO was to be filed and, if so, was it received and available for later review.

All life insurers must file an SAO including an asset adequacy analysis unless granted an exemption of such analysis based on doing business only in one state.

An actuarial memorandum, which supports the findings expressed in the SAO, is available upon request by the regulator. The insurer will also file with the commissioner by March 15 a confidential RAAIS.

If the insurer presently issues or has in-force policies that contain non-guaranteed elements, then a Non-guaranteed Elements Actuarial Opinion must also be filed. Other opinions may be required. For example, for business subject to an actuarial guideline—such as *Actuarial Guideline XXXV—The Application of the Commissioners Annuity Reserve Method to Equity Indexed Annuities* (AG 35) or XXXVI, which includes an opinion requirement, a compliant actuarial opinion must also be filed. The domestic insurance regulator should be familiar with all of the opinions each life insurer is required to submit. Reviewing the previous year’s checklist is useful, but the state insurance regulator should be aware of new policy forms issued during the year that may add additional opinion requirements.

**Asset Adequacy Analysis**

Asset adequacy analysis is a process the appointed actuary uses to ascertain that the assets supporting a block of liabilities, along with future premium payments and investment income, are adequate under moderately adverse conditions to pay future expenses and policy obligations. This analysis may include cash flow testing, gross premium valuations, demonstrations of extreme conservatism, risk theory techniques, or loss ratio methods. Prior to 2001, requirements similar to the AOMR specified seven scenarios for cash flow testing (commonly referred to as the New York 7). Amendments adopted in 2001 removed those required scenarios and allowed the appointed actuary to determine the scenarios to use for cash flow testing.

The asset adequacy analysis is testing the adequacy of the reserves on a block of business as of a valuation date, not the solvency of the company. Typically, cash flow testing includes assets approximately equal to the reserves and therefore does not include assets equal to the surplus. In addition, future new business is not included in the cash flow testing.

The asset adequacy analysis typically includes approximately 95% of the total of life insurance reserves, annuity reserves and reserves for deposit-type contracts. This 95% threshold is included in *procedure #4,* but it is a recommendation, and the standard of materiality may vary among actuaries and among state regulators.

Actuarial Guideline 53:

Beginning with annual 2022, certain insurers will be required to document support for asset~~s~~ adequacy analysis for high-yielding complex assets pursuant to Actuarial Guideline 53 – Application of the Valuation Manual for Testing of Adequacy of Life Insurer Reserves (AG-53).

As noted in AG-53, "regulators have observed a lack of uniform practice in the implementation of asset adequacy analysis. The variety of practice in incorporating the risk of complex assets into testing does not provide regulators comfort as to reserve adequacy. Examples of complex assets are structured securities, including asset-backed securities and collateralized loan obligations, as well as assets originated by the company or an affiliated or contracted entity. An initial increase in this activity has been noted in support of general account annuity blocks; however, recent activity was noted in other life insurer blocks. AG-53 is intended to provide uniform guidance and clarification of requirements for the appropriate support of certain assumptions for asset adequacy analysis performed by life insurers.”

This Guideline applies to a limited scope of life insurers, specifically those with:

1. Over $5 billion of general account actuarial reserves (from Exhibits 5, 6, 7, and 8 of the Annual Statement) and non-unitized separate account assets; or,
2. Over $100 million of general account actuarial reserves (from Exhibits 5, 6, 7, and 8 of the Annual Statement) and non-unitized separate account assets and over 5% of supporting assets (selected for asset adequacy analysis) in the category of Projected High Net Yield Assets, as defined in Section 3.F. of the AG-53.

The NAIC Life Actuarial (A) Task Force has developed a template for reporting of AG-53 documentation. The templates include reporting by asset classes, affiliated vs. non-affiliated, and initial assets vs. reinvestment assets. The template along with a narrative are submitted for the filing.[[1]](#footnote-2)

The NAIC Valuation Analysis Working Group (VAWG) anticipates conducting reviews of AG-53 filings and can serve as a resource for state insurance departments for their own AG-53 reviews.

**Life Reserving Risk Assessment (Including Principle-Based Reserving) overview**

Life insurance reserves represent the liability established by the insurance company to pay future policy benefits such as death benefits upon the death of the insured, endowment benefits upon the maturity of a life insurance policy and cash surrender benefits upon the surrender of the life insurance policy. Historically, the company’s liability to pay future policy benefits has been determined by calculating a reserve based on a formula valuation methodology as described below. Life insurance products have evolved over time. Today, such products may be quite complex, offering multiple benefits and/or options to the policyowner or the insured or both the policyowner and the insured within a single contract such as death benefits, accelerated death benefits, secondary guarantees such as no lapse guarantees, policy loans, retirement income benefits such as guaranteed lifetime income benefits, and long-term care (LTC) benefits. The value of some of these complex benefits depends upon the current and future market value of the underlying assets. State insurance regulators have found it increasingly difficult to define or modify a formula-based valuation methodology to value all the options and/or benefits in a single contract. This complexity of current insurance products, along with the fact that the value of certain benefits depends upon the current and future market value of underlying assets, has led to the development of a principle-based valuation methodology that incorporates the value of both asset and liability cash flows. The principle-based valuation methodology is described below.

To implement the principle-based valuation methodology, amendments to the Standard Valuation Law were adopted in 2009, and a *Valuation Manual* was developed. The *Valuation Manual*, which is referred to in the amended Standard Valuation Law, provides reserve requirements for life, health and annuity products issued on and after the manual’s operative date. Requirements include all of the details of the methodology for determining a principle-based reserve (PBR), as well as any changes to the formula-based valuation methodology that occurs on and after the operative date of the *Valuation Manual*.

Unless a change in the *Valuation Manual* specifies a later effective date, changes to the *Valuation Manual* shall be effective Jan. 1 following the date when the change to the *Valuation Manual* has been adopted by the NAIC by an affirmative vote of at least three-fourths of the members of the NAIC voting but not less than a majority of the total membership and such members voting in the affirmative represent jurisdictions totaling greater than 75% of the direct premiums written as reported in the most recent life, A&H annual statements; health annual statements; or fraternal annual statements. No state legislative adoption is needed to effect changes to the valuation manual.

The *Valuation Manual* defines the insurance contracts that are subject to a principle-based valuation (Section II). Unless otherwise specified in Section II, the principle-based valuation methodology will apply to life insurance contracts issued on and after the operative date of the *Valuation Manual*. However, a company may elect to defer the implementation of the principle-based valuation methodology to life insurance contracts issued during the first three years following the operative date of the *Valuation Manual*.

The Valuation Analysis (E) Working Group consisting of state insurance regulators with expertise in actuarial, financial analysis and examination experience reports to the Financial Condition (E) Committee and supports the states in the review of PBR to ensure consistent implementation and application of the methodology. The Working Group will also suggest necessary changes to the *Valuation Manual* to enhance clarification and interpretation of application of the principle-based valuation methodology.

The NAIC will acquire modeling software and develop actuarial staff expertise in modeling insurance cash flows to assist the Valuation Analysis (E) Working Group and the individual states in conducting analysis and examinations to verify the PBR and exclusion test calculations performed by the company.

As mentioned in the procedures, any questions or requests for assistance regarding PBR and for asset adequacy analysis may be made to the NAIC actuarial resources. Please see the NAIC website for the Valuation Analysis (E) Working Group for contact information regarding the use of NAIC actuarial resources and use of the Working Group if needed.

**Formula-Based Valuation Methodology**

Theoretically, the formula-based reserves represent the present value of future guaranteed benefits reduced by the present value of expected future net premiums. The insurance policy is a unilateral contract whereby the insured can cancel the agreement to pay premiums at any time. However, the insurer is “locked in” regardless of future experience and cannot forfeit on its guarantees as long as the premiums are paid. Life reserves are required in order to ensure that commitments made to policyholders and their beneficiaries will be met, even though the obligations may not be due for many years. Since the primary purpose of life reserves is to pay claims when they become due, life reserves must be adequate, and the funds must be safely invested.

The *Valuation Manual* prescribes the minimum standards to be used in determining the formula-based reserves as applicable in addition to PBR as discussed elsewhere in this document. Currently for most formula-based reserves, the manual refers to requirements in the NAIC *Accounting Practices and Procedures Manual* (AP&P Manual). Insurers may establish life reserves, which equal or exceed these minimum standards. These minimum life reserve standards specify a: 1) valuation mortality table; 2) maximum valuation rate of interest; and 3) valuation method. The valuation method used to define minimum life reserves for statutory accounting purposes is referred to as the Commissioners Reserve Valuation Method (CRVM). The mortality rate assumptions are substantially higher than what the insurer can expect to realize from medically underwritten insurance policies. The interest rate assumptions are intended to be significantly lower than current money and capital market yields. Thus, the life reserves developed are generally conservative.

There are three general valuation methods under a formula-based valuation methodology used to value life reserves. The net level premium method does not provide for a first-year acquisition cost allowance in determining life reserves. Therefore, this method results in the most conservative, or highest, life reserve valuation of the three methods. The full preliminary term method does provide a first-year expense allowance and then assumes that the remaining premium stream is used to cover policy benefits. The CRVM is a form of the full preliminary method. This method allows for a lower life reserve valuation than the net level premium method in the earlier years of the policy term. The modified preliminary term method is a variation of the two methods described above and results in a reserve valuation between the net level premium and preliminary term methods.

As described below, the type of life insurance policy dictates the amount of the life reserve that must be established and the duration for maintaining the reserve. In addition, special situations arise which require unique reserving techniques. The following summarizes the major types of life insurance policies, and the related reserving implications under a formula-based valuation methodology:

1. **Ordinary Life Reserves**

Under a whole life plan of insurance, the insurer is obligated to maintain a reserve until the death of the insured. Term life insurance provides coverage only for the period that is specified in the policy. Under a term insurance plan, the insurer must maintain a reserve, which reduces to zero upon expiration of the term period. Similar to term insurance, endowment life insurance provides coverage for a period specified in the policies. Unlike term insurance, the proceeds of endowment insurance are payable if the insured lives to the end of the period. Policies which permit flexible premium payments, are referred to as “universal life” policies and those with fixed premiums are referred to as “interest sensitive” policies. Universal life policies are accumulation type policies where the current account value is determined based upon the accumulation of premiums, less mortality charges and expense charges, plus a current interest rate credit. The account value less surrender charges is the cash value. Because of the unique features of universal life and interest sensitive types of policies, unique reserving requirements are specified for them in Appendix A-585, *Universal Life Insurance*, of the AP&P Manual. The minimum standard for universal life reserves considers guarantees within the policy at the time of issue, present value of future guaranteed benefits, account value and cash value.

2. **Group Life Reserves**

Most group life insurance is monthly renewable term insurance. For these policies, gross premiums are typically recalculated periodically, most often annually, using the age and sex census of the group along with experience adjustments. Therefore, the reserve is usually calculated as the unearned premiums or a percentage thereof to estimate the claim exposure. However, some group life insurance policies provide permanent or longer-term benefits analogous to individual coverages. In these cases, the reserving methods are similar to those employed for individual insurance, using appropriate mortality tables. Appendix A-820 does not specify a mortality table for group life insurance but leaves that to the discretion and approval of the domiciliary state.

3. **Industrial Life Reserves**

Industrial life insurance is unique in that it involves higher unit premiums, smaller face amount policies and higher mortality expectations. The minimum standards for reserves are the same as the traditional life insurance except that a unique mortality table is used.

4. **Life Reserves Relating to Riders**

Life insurance policies frequently include riders for additional benefits such as accidental death and disability and waiver of premium upon disability. The minimum valuation standards for reserves are the same as for the base life insurance except that specialized mortality and disability tables are used, and the net level premium valuation method is required.

5. **Miscellaneous Life Reserves**

There are various other special situations involving life reserves. First, a deficiency reserve may be required in situations where the actual policy gross premium is less than the valuation net level premium. This situation occurs when pricing assumptions are used that are different from the minimum reserve valuation standards. This does not necessarily indicate that the policy is being sold at a loss by the insurer, but rather is a reflection of the highly conservative nature of the minimum reserve valuation standards. Second, there may be unusual situations where the cash surrender value of a life insurance policy is greater than the minimum reserve standard. In these situations, life reserves must be increased by the amount of this excess.

6. **Minimum Aggregate Reserves**

In the aggregate, policy reserves for all life insurance policies valued under a formula-based valuation methodology that are reported in the statutory financial statements must equal or exceed reserves calculated by using the assumption and methods that produce the minimum formula standard valuation.

**Principle-Based Valuation Methodology**

In general, under a principle-based valuation methodology, all of the liability cash flows emanating from the contract benefits provided in the product are determined for each period and compared with all of the asset cash flows for each period determined from the assets the insurance company has purchased or plans to purchase or sell to fund the liability cash flows. The resulting differences between the asset and liability cash flows for each period are valued under a range of likely or plausible economic scenarios. Economic scenarios may consist of interest rates or market returns or both depending on the nature of the asset and liability cash flows. A single economic scenario represents multiple consecutive periods (such as 30 or 40 years) of movements in the underlying interest rate or market rate returns. The length of the scenario period is determined by the length of the liabilities being valued. The economic scenarios are stochastically (randomly) generated using a prescribed economic scenario generator (ESG). The prescribed ESG can be found on the Society of Actuaries (SOA) website.

The reserve liability under a principle-based valuation methodology is determined as a function of the discounted value of the differences between the asset and liability cash flows for each period over the range of economic scenarios. The objective is to determine if there is a reasonable likelihood that assets are insufficient to cover the obligations of the company, and by what amount they may be insufficient. Under economic scenarios where assets are insufficient, the principle-based methodology determines all the amounts of the insufficiencies and discounts them back to the valuation date. The largest discounted value is known as the Greatest Present Value of Accumulated Deficiencies (GPVAD) for that scenario. The stochastic reserves may be set at a CTE (70) level (conditional tail expectation at the 70% level). The function CTE (70) means the average of the 30% (100% - 70%) worst (largest) GPVADs. So, for example, if a company randomly generates 1,000 economic scenarios, it would then determine the largest accumulated amount of deficiency for each of the 1,000 scenarios. The CTE (70) stochastic reserve (SR) level would be determined by taking the average of the 300 [1,000 x (100% - 70%)] worst GPVADs out of the 1,000 scenarios.

The principle-based valuation methodology developed for life insurance contracts defines three components of a PBR: 1) a net premium reserve (NPR); 2) a deterministic reserve (DR); and 3) an SR. The level of risk embedded in a life insurance contract will determine whether the PBR will consist of all three reserve components (NPR, DR, SR), only two reserve components (NPR, DR), or only one reserve component (NPR). The principle-based valuation methodology defines a stochastic exclusion test and a deterministic exclusion test, each of which are designed to measure the level of risk embedded in a life insurance contract. Life insurance contracts that pass an exclusion test are then exempt from the calculation of the associated PBR component. For example, all life insurance contracts that pass the stochastic exclusion test but fail the deterministic exclusion test must calculate the NPR and DR components. Life insurance contracts that pass both the stochastic and deterministic exclusion tests must only calculate the NPR component. For groups of policies other than variable life or universal life with a secondary guarantee (ULSG), a company may provide a certification by a qualified actuary that the group of policies is not subject to material interest rate risk or asset return volatility risk in lieu of performing the stochastic exclusion test. In addition, a company is not required to compute SR and DR on any of its ordinary life policies if it meets the requirements for a “Companywide Exemption” provided in Section II of the *Valuation Manual*. If the domestic commissioner does not reject a company’s application for the companywide exemption pursuant to the *Valuation Manual*, Section II, then the company will compute reserves for its ordinary life policies per the requirements provided in VM-A and VM-C of the *Valuation Manual*.

Note that some states incorporated a “companywide exemption” in the Standard Valuation Law that may override Section II of the VM-20, Requirements for Principle-Based Reserves for Life Products. In such cases, the state’s Standard Valuation Law will determine whether a company is not subject to computing the stochastic and deterministic reserves. Note also, the insurance commissioner may exempt specific product forms or product lines of a domestic company that is licensed and doing business only in a single state as defined in Section 15 of the amended Standard Valuation Law.

As part of the calculation process, the principle-based valuation methodology allows companies to aggregate or group policies with similar risk characteristics. For example, all term policies that provide only a death benefit and do not provide any cash surrender values may be grouped together by underwriting class. The exclusion tests are then applied on a group or aggregated basis and not a contract-by-contract basis. Also, the DR and the SR are calculated on an aggregated or group basis. The NPR component is a fully prescribed formula-based reserve and can be applied on a contract-by-contract basis.

The annual statement blank contains a VM-20 Supplement. This supplement breaks out the PBR into its various components of NPR, DR and SR. State insurance regulators may request the assistance of NAIC modeling staff and or the Valuation Analysis (E) Working Group in verifying exclusion testing, as well as various components of the PBR on a smaller sample set of company contracts.

**Actuarial Opinion and Asset Adequacy Analysis**

Due to the complexity in determining life reserves, insurers must rely on actuaries to assist with valuation of these reserves. Insurers are required to annually obtain an opinion regarding the reasonableness of the reserves by a qualified actuary who is appointed by the company. The actuarial opinion requirements are provided in VM-30 of the *Valuation Manual*. These requirements also include requirements for asset adequacy analysis. As a result of the asset adequacy analysis conducted by the appointed actuary, the actuary may conclude that the insurer’s assets are not adequate to cover future liabilities as valued by the calculated reserves. When this occurs, reserves must be increased by the estimated deficiency resulting from asset adequacy testing. Additional procedures regarding the SAO are found in Section III.B.8.d.

**Accident and Health Reserving Risk Assessment Overview**

The purpose of A&H insurance is to protect the insured against economic losses resulting from accident and/or sickness. There are many different types of A&H policies issued by insurers. The economic losses covered, and the types of benefits provided, vary with the different types of A&H policies. For example, a medical insurance policy may provide reimbursement for hospital, surgical, medical and drug expenses and a dental insurance policy may cover dental expenses. Another type of A&H insurance policy issued is disability insurance which provides monthly benefits for loss of income due to disability on either a short-term or long-term basis. A&H insurance is provided through individual policies, group policies and certain special types of policies such as credit disability insurance.

A&H reserves are complex and difficult to analyze because of the wide variety of types of coverage included in the A&H lines of business and the diversity of benefits which must be reserved for. A&H reserves are comprised of two separate liability line items in the Annual Financial Statement: 1) the aggregate reserve for A&H policies; and 2) the A&H policy and contract claims liability. These liabilities are discussed in more detail below.

1. **Aggregate Reserve for A&H Policies**

The aggregate reserve for A&H policies consists of two different components: 1) policy reserves; and 2) claim reserves.

a. **Policy Reserves**

Policy reserves are required in recognition of the fact that premiums cover future liabilities as well as current claims and expenses. Policy reserves include unearned premium reserves, additional contract and actuarial reserves, reserves for future contingent benefits, and reserves for rate credits. The various types of policy reserves are discussed in more detail below.

Unearned premium reserves represent the amount of the premium applicable to coverage which extends beyond the valuation date (date of the statement). The unearned portion of the premium is generally computed on a pro rata basis.

Additional contract reserves are required for those policies with level premiums where the risk of loss increases with the age of the insured. For these policies, the insurer is required to set aside a portion of the current premium to pay claims that experience indicates will be incurred as the policy continues in force. These reserves are actuarially determined and are similar in concept to life reserves with the added requirement to consider morbidity assumptions as well as mortality and interest assumptions. The NAIC AP&P Manual prescribes the minimum standards used in determining the A&H policy reserves. Insurers may establish A&H policy reserves which equal or exceed these minimum standards. These minimum A&H policy reserve standards for most types of A&H insurance include: 1) a given morbidity table; 2) a maximum rate of interest; and 3) a valuation method. In no event, however, may the aggregate reserve for all policies be less than the unearned gross premiums under such policies. For financial statement purposes, the additional contract reserves represent the excess of the required A&H policy reserves over the unearned gross premiums on A&H policies. The insurer is required to attach to the Annual Financial Statement a description of the valuation standards used in calculating the additional contract reserves, specifying the reserve bases, interest rates, and methods.

Determine if additional actuarial reserves are required as a result of actuarial cash flow testing and asset adequacy analysis.

If the A&H policy provides for future contingent benefits, a portion of the current premium must also be reserved for such coverage. For example, some A&H policies provide for deferred maternity benefits (which cover medical expenses incurred in childbirth for approximately nine months after the cessation of premium payments, even though the policy has been canceled, so long as conception occurred prior to the policy being canceled). An actuarially determined estimate of the costs associated with this future contingent benefit must be reserved for out of the current premium.

Some A&H policies provide for rate refunds based on policy year experience. For these policies, a reserve is required to be established for the rate credits based on the amount of the expected credit as of the valuation date. The reserve for rate credits is a difficult liability to establish because many policy years do not end on the valuation date (date of the statement) and subsequent experience may cause the rate credit to be greater or less than the liability established. However, the liability established must be reasonable under the circumstances and consistently calculated.

b. **Claim Reserves**

Claim reserves (sometimes referred to as disabled life reserves) are required for claims which involve continuing loss. The claim reserves represent the actuarially determined present value of future benefits or future covered benefits not yet due as of the valuation date (date of the statement) which are expected to arise under claims which have been incurred as of the statement date. However, although the liability for future covered benefits which are expected to arise under claims which have been incurred as of the statement date on medical insurance policies should be included in claim reserves according to *Statement of Statutory Accounting Principles* (*SSAP) No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses*, some insurers include this liability in the A&H policy and contract claims liability which is discussed below.

2. **A&H Policy and Contract Claims Liability**

The A&H policy and contract claims liability includes: 1) due and unpaid claims; 2) claims in the course of settlement; and 3) incurred but not reported (IBNR) claims.

a. **Due and Unpaid Claims**

Due and unpaid claims are those which are complete except for the payment of the amount due. The amount of an insurer’s due and unpaid claims is generally very small, and this liability is generally determined on an exact inventory basis of claims ready to be paid.

b. **Claims in the Course of Settlement**

Claims in the course of settlement include claims which have not been paid because all of the required information has not yet been received as of the statement date, resisted claims and the accrued portion (amount that is payable as of the statement date) of the next periodic payment on disability claims. The unaccrued portion of the next periodic payment on disability claims would be included in claim reserves discussed above. The liability for claims in the course of settlement, other than disability claims, may be determined based on estimates for each outstanding claim or the development of average claim factors or formulas based on historical experience.

c. **IBNR Claims**

IBNR claims are those claims which have occurred but have not yet been reported to the insurer. Since neither the number nor dollar amount of IBNR claims are known as of the statement date, the liability for IBNR claims is difficult to estimate. The liability for IBNR claims is generally estimated based on an actuarial analysis of past experience or on the development of lag studies using historical experience.

Due to the variety of types of A&H policies issued and the complexity of determining the aggregate reserve for A&H policies and the A&H policy and contract claims liability, most insurers rely on actuaries or individuals with actuarial training to assist in estimating these liabilities. Although some insurers do not use actuaries to actually set the A&H reserves, insurers are required to annually obtain an opinion regarding the reasonableness of the established A&H reserves by a qualified actuary. Therefore, qualified actuaries are involved in setting and/or reviewing the A&H reserve liabilities established for virtually all insurers.

**Annuity ReservinG AssessmentOverview**

Annuity reserves represent the liability established by the insurer to pay future policy benefits. While life insurance provides protection from the loss arising from dying too soon, an annuity protects against the loss from living too long. Theoretically, annuity reserves represent the present value of future guaranteed benefits reduced by the present value of expected future net premiums. An annuity can be in either an accumulation mode or a payout mode. Annuity policies take three forms: 1) annual premium deferred annuity; 2) single premium deferred annuity; and 3) single premium immediate annuity. Under an annual premium deferred annuity, annual premiums are paid during an accumulation period until such time as the policyholder (i.e., annuitant) receives income, surrenders the policy, or it terminates upon death. These annual premiums may be a specified amount or subject to the discretion of the owner under “flexible premium” annuities. Even if premiums are discontinued, the cash value of the policy will continue to accumulate until income is elected or the policy is otherwise terminated for its value. At income commencement, the annuitant receives the monthly income based upon cash value of the policy at that time and the annuity factor guaranteed in the policy or currently being applied, if more favorable, for the annuitant’s attained age. The single premium deferred annuity also accumulates until such time as the annuitant desires to take income or the policy is otherwise terminated. However, only a single premium is paid at the time the annuity is purchased.

The AP&P Manual prescribes the minimum standards to be used in determining reserves. Appendix A-820*, Minimum Life & Annuity Reserve Standards* of the AP&P Manual defines the minimum standards for all types of policy reserves, including life & annuity policies. Insurers may establish annuity reserves, which equal or exceed these minimum standards. These minimum annuity reserve standards specify a: 1) given mortality table (if applicable); 2) maximum rate of interest; and 3) valuation method. The valuation method used to define minimum annuity reserves for statutory accounting purposes is referred to as the Commissioners Annuity Reserve Valuation Method (CARVM). The mortality rate assumptions, if applicable, are substantially lower than what the insurer can expect to realize from medically underwritten insurance policies. The interest rate assumptions are intended to be significantly lower than current money and capital market yields. Thus, the annuity reserves developed are generally conservative.

As described below, the type of annuity dictates the amount of the annuity reserve that must be established and the duration for maintaining the reserve. In addition, special situations arise that require unique reserving techniques. The following summarizes the major types of annuities and the related reserving implications:

1. **Deferred Annuities (Annual Premium and Single Premium)**

All deferred annuities are reserved using the CARVM method. The reserve on any specific valuation date requires a calculation of the present value of future guaranteed benefits less the present value of future required net premiums for the current duration of the policy and for each future duration. For purposes of calculating this series of “excesses,” premiums are only considered to be payable for the specific duration for which the excess is being calculated. The reserve is the greatest of these excesses. Reserves for guaranteed benefits must consider all contractual guarantees including cash values, death benefits, annuity income, etc. Cash values are actually guaranteed under the policy provisions.

2. **Immediate Annuities**

Immediate annuities are those that are in payout mode. Reserves are determined using the CARVM method, except that, in the case of supplemental contracts without life contingencies, mortality tables are not used.

3. **Guaranteed Interest Contracts**

Guaranteed interest contracts (GICs) represent a type of funding vehicle used where group deferred annuities are involved. Under a basic GIC, the insurer accepts a single deposit from the plan sponsor (i.e., the employer) for a specified period of time, such as five years. Interest earned during the period may accumulate until the period expires, or the earned interest may be paid out annually. At the end of the period, the account balance, including any accumulated interest, is returned to the plan sponsor. Numerous variations of this basic guaranteed interest contract have been developed that: 1) allow the plan sponsor to make monthly contributions rather than the single deposit; and 2) provide that the principal and interest can be paid out in installments to make benefit payments to plan participants.

4. **Structured Settlements**

Structured settlements are a form of immediate annuity generally established in connection with the settlement of a property/casualty claim wherein a predetermined future benefit stream is desired. Reserves are determined using the CARVM method with special actuarial guidelines that prescribe specialized mortality tables and govern the use of lump sum balloon payments.

5. **Variable Annuities**

Variable annuities are annuities where the amount of each benefit payment is not specified in the annuity contract, but rather fluctuates according to the earnings of a separate account fund. The primary concern relating to variable annuities reserves relates to the treatment of the CARVM expense allowance in the general account. The CARVM method is generally used, but the current thinking is that CARVM may not be appropriate for certain types of variable annuities that do not include guaranteed benefits.

Due to the complexity in determining annuity reserves, insurers must rely on actuaries to assist with valuation of these reserves. Insurers are required to annually obtain an opinion regarding the reasonableness of the reserves by a qualified actuary. In the aggregate, policy reserves for all annuity policies that are reported in the statutory financial statements must equal or exceed reserves calculated by using the assumptions and methods that produce the minimum standard valuation.

**Long-Term Care Insurance (LTCI) Overview**

“Long-term care insurance” means any insurance policy or rider advertised, marketed, offered or designed to provide coverage for not less than 12 consecutive months for each covered person on an expense incurred, indemnity, prepaid or other basis, for one or more necessary or medically necessary diagnostic, preventive, therapeutic, rehabilitative, maintenance or personal care services, provided in a setting other than an acute care unit of a hospital[[2]](#footnote-3). Historically, insurers that wrote LTCI encountered difficulties accurately projecting claims costs, lapse rates, investment returns, and other factors associated with LTCI, and subsequently many writers have experienced unprofitability in older (legacy) blocks of LTCI business. This has led many companies to request significant rate increases, modify product benefits or exit the product line altogether. Therefore, many insurers continue to experience significant solvency challenges related to this line of business, and state insurance regulators should continue to carefully evaluate and monitor the solvency position of all insurers with a material amount of LTCI business.

These same risks also affect reinsurers because the reinsurance contract may not arbitrarily allow for ceded premium increases. Additionally, in order to effectuate a true transfer of risk, the reinsurer may not have the ability to require the direct writer to request rate increases. As some insurers look for avenues to minimize or eliminate its risk from the LTCI block, they may look to new reinsurance opportunities or nontraditional buyers.

In addition, periods of economic downturn and low interest rates increase the risk that LTCI writers will be challenged to generate sufficient returns to support this line. In addition, declines in projected investment returns could have a significant impact on LTCI reserve assumptions.

[***Actuarial Guideline 51***](https://www.naic.org/cipr_topics/topic_actuarial_guideline_li_ag51.htm)***—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves* (AG 51)**

Effective for reserves reported with the Dec. 31, 2017, financial statement, [*Actuarial Guideline 51*](https://content.naic.org/cipr_topics/topic_actuarial_guideline_li_ag_51.htm)*—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves* (AG 51) now applies. The *Health Insurance Reserves Model Regulation* (#10) and the *Valuation Manual* VM-25, Health Insurance Reserves Minimum Reserve Requirements, contain requirements for the calculation of LTCI reserves. AG 51 requires companies with more than 10,000 LTCI enrollees to submit stand-alone LTCI asset adequacy analyses to the state. AG 51 is intended to provide uniform guidance and clarification of requirements for the appropriate support of certain assumptions for the asset adequacy testing applied to a company’s LTCI block of contracts. AG 51 requires reporting to the department within the appointed actuary’s actuarial memorandum required by VM-30 or in a special actuarial memorandum containing LTCI-specific information on the results of the analysis, assumptions on mortality, voluntary lapse, morbidity, investment returns and rate increase assumptions.

**Factors Affecting LTCI Reserves and Rates**

This following guidance provides additional information that may assist state insurance department staff in understanding the differences in premium rate review and approval, and valuation review of reserve adequacy assumptions in order to maintain or improve state insurance departments’ current intra-departmental coordination/communication practices between the states’ rate reviewers, valuation actuaries and analysts/ examiners.

**Reserve Increase Factors**

1. **Background**

Ever since asset adequacy testing became a requirement for life insurers in the 1980s, actuaries have been required to analyze reserve adequacy assumptions on an annual basis and make the assumptions more conservative when experience or expectations become more adverse. If the result of the more conservative assumptions was inadequate reserves, companies have been required to establish higher reserves to ensure future claims could be paid in the more adverse environment.

In some cases, the chain of events is straightforward. For instance, for life insurance, if more people die at earlier ages than expected and the experience is highly credible, then the actuary increases mortality rates in the upcoming year-end filing, leading to higher reserves being established.

In other cases, the chain of events is less straightforward. For instance, it is expected that cash surrenders on deferred annuity products will increase if interest rates rise. However, most deferred annuities have been sold during a period of decreasing interest rates. Actuarial and regulatory practice require reserves to be adequate in moderately adverse conditions, even if those conditions have not been recently experienced. There is typically judgment by the company actuary and another layer of judgment by regulators in play in this type of complex situation. The *Standard Valuation Law* (#820), the *Valuation Manual* and the Actuarial Standards Board’s (ASB’s) Actuarial Standards of Practice (ASOPs) describe how these complex situations should be handled.

1. **Long-Term Care Insurance**

For LTCI blocks of business that experience higher morbidity than expected, this experience will likely lead to changes in expectations on future morbidity for both the observed block and other blocks.

With LTCI, some factors are likely to play out in a straightforward manner. A combination of higher life expectancy and lower lapses will lead to more people than expected reaching prime LTCI claims ages of 80 and above, which leads to companies holding higher reserves than originally anticipated. Similarly, all companies have experienced the decreasing interest rate environment, which has led to lower-than-expected investment returns and the need to hold higher reserves because investment income is relied upon to help pay claims.

Mortality, lapse, and interest rate factors become observable and can develop credibility during the premium-paying years prior to policy years when significant claims tend to occur.

1. **Morbidity Assumptions**

Morbidity, however, has tended to fall into the category of a complex factor. The three main aspects of LTCI morbidity are: 1) incidence, the percentage of people at a given age who start a claim; 2) average length of claim; and 3) utilization, which is less than 100% if, e.g., the daily nursing home cost is lower than the maximum daily benefit in the insurance policy.

There has not been uniform experience development in morbidity, except that length of claim has tended to increase, likely because cognitive (e.g., dementia and Alzheimer’s disease) claims tend to be longer than average and incidence has been higher than expected, likely due to more people reaching the age when cognitive claims tend to occur.

Because of divergent experience among companies and because morbidity becomes observable and credible during the later claim-paying years, establishing and regulating LTCI morbidity assumptions has not been straightforward. However, as with other factors and other products, the handling of these situations is addressed in Model #820, *Valuation Manual* and ASOPs. Examples of these standards include:

* Model #820 Section 12A(3)(a): “Assumptions shall, to the extent that company data is not available, relevant or statistically credible, be established using other relevant, statistically credible experience.”
* Model #820 Section 12A(4): “Provide margins for uncertainty … such that the greater uncertainty, the larger the margin and resulting reserve.”
* AG 51 (providing guidance on VM-30) Section 4.B.: “The analysis shall comply with applicable Actuarial Standards of Practice, including standards regarding identification of key risks. Material assumptions associated with the LTCI business shall be determined testing moderately adverse deviations in actuarial assumptions.”
* *Acounting Practices and Procedures Manual* (AP&P Manual), Appendix A-010 paragraph 48.e (referenced in VM-30): “The total contract reserve established shall incorporate provisions for moderately adverse deviations.”
* AP&P Manual, Appendix A-010 paragraph 51 (referenced in VM-30): “Annually, an appropriate review shall be made of the insurer’s prospective contract liabilities … and appropriate increments … if such tests indicate that the basis of such reserves is no longer adequate.”

The result is that whether credible experience exists or not, the company actuary needs to set assumptions underlying reserves, and the factors underlying the assumptions are often complex and frequently changing. Company and regulatory actuaries are experienced in working in this complex, changing environment with many life insurer products, such as variable annuities, indexed products and LTCI having product features and factors underlying reserves that are complex and changing.

1. **Rate Increases**

A unique aspect of LTCI products is being a long-term product with rate increases that require review by states. Besides states with the largest insurance departments, the actuaries reviewing LTCI reserves are often the same staff reviewing LTCI rate increases. For larger states, there is typically coordination or training to ensure the reserve and rate teams are on the same page regarding developments in, for example, life expectancy and morbidity. State insurance regulator experience in reviews of LTCI reserves and rate increase filings show that reserve increases and requests for rate increases are due to similar factors, including higher life expectancy, lower lapses, lower investment returns and worsened morbidity.

There has been additional regulatory attention on ensuring the companies asking for rate increases based on adversity of certain factors are holding reserves based on at least the same level of adversity in those factors. The questions used in many states’ rate increase reviews require the company to explain the consistency between the rate increase filing assumptions and reserve adequacy assumptions.

To date, the most common complex, non-straightforward case is the applicability of a company’s adverse morbidity experience of an older LTCI block to morbidity assumptions on a newer block. This complex dynamic comes into play when establishing reserve and rate increase assumptions.

The reserve assumption changes can occur with initiation by the company, through formal or informal agreement between regulators or companies, or by relying on Model #820 Section 11.6., which allows a commissioner to require a company to change reserve assumptions and adjust reserves.

*Example:*

A typical example of a chain of events would first involve a block issued in 1995 to 1998 to policyholders with issue ages ranging from 52 to 62. By 2019, enough policyholders have reached prime LTC claim ages of 80+. This experience is what drives reserve assumption changes. As policyholders enter ages in the upper 80s and 90s, additional experience will be attained that will predict future LTCI costs and result in further changes in reserve assumptions. The development of older-age morbidity experience is expected to generate volatility in LTCI reserves. For some companies, the older-age morbidity experience will likely be unfavorable, with increased reserves needed. For most other companies, the older-age morbidity experience will likely be as expected, leading to no significant, unforeseen reserve increases.

Companies will be expected to apply lessons learned from older blocks of business to their newer blocks. Those lessons will likely differ by situation. For example, to the extent underwriting is different, the newer and older blocks may experience different morbidity trends.

1. **Rate Increase Factors**

Factors affecting LTC reserves, including higher life expectancy, lower lapses, lower investment returns and changes in morbidity also potentially affect LTC rate increases.

If a company’s reserve adequacy testing is dependent upon assumption of future LTC rate increases, the state insurance department staff performing reserve valuation should evaluate that assumption for reasonableness. The company’s rate increase assumptions and documentation should be consistent with the requirements specified in AG 51 related to rate increase plans. The state insurance department staff performing reserve valuation may wish to coordinate and communicate with the state’s rate review staff to help evaluate the appropriateness and reasonableness of the company’s future rate increase assumption.

1. **Intra-Department Communication and Coordination of Actuarial Review Work**

While every state insurance department may be structured differently, many state insurance departments have the same staff members perform work on both LTCI reserve valuation analysis and rate increase reviews, while others have separate staff perform these functions. In the latter instance, department staff should be aware of or coordinate the intra-department review work related to each function.

The following are suggested steps a state may consider ensuring that actuarial assumptions associated with the rate increase request are consistent with the assumptions embedded in the asset adequacy testing.

* Inquire of the company’s actuary or senior management regarding:
	+ The relationship of the actuarial assumptions embedded in the rate filing versus those made for annual statement reporting.
	+ Explanation if there is inconsistency between assumptions reported.
	+ How AG 51 affects the company’s rates and reserves.
	+ Affirmation that the assumptions underlying the projections are consistent with the assumptions used in asset adequacy analysis.
	+ A copy of the company’s rate increase plan when rate increase filings disclose that future rate increase filings, beyond what is currently being requested, are planned.
* Consider reviews of different filings for consistency. For example:
	+ Compare reserving assumptions to rate increase assumptions,
		- e.g., review the RAAIS and the Actuarial Opinion and Memorandum (AOM) to ensure that assumptions used for pricing and reserving are similar in nature.
	+ Identify assumptions underlying the asset adequacy testing memorandum that appear to be an outlier and then compare against a subsequent rate increase filing.
1. Given this is a new reporting requirement in 2022, additional analysis guidance in this area may be added to the Handbook in the future. [↑](#footnote-ref-2)
2. Definition per *Long-term Care Insurance Model Act* (#640) Section 4.A. [↑](#footnote-ref-3)