

**1986 VALUATION ACTUARY  
SYMPOSIUM PROCEEDINGS**

**SESSION 9**

**VALUATION REPORTS FOR REGULATORS**

MS. DONNA R. CLAIRE: As most of you know, the National Association of Insurance Commissioners (NAIC) has taken some actions toward the concept of valuation actuary. The New York Insurance Department has taken a number of further steps. Therefore, I'll spend a few minutes talking about the NAIC and spend the rest of my talk on what's happening in New York.

The NAIC added a requirement to the Life and Accident and Health Annual Statement Blank in 1978 that the actuary must include a statement that reserves make good and sufficient provision for all unmatured obligations of a company. This sounds good, but what it means wasn't exactly spelled out. Last year, after much debate, Actuarial Guideline #14 was added to the Financial Examiners' Handbook. It states that the actuary can be asked to what extent good and sufficient analysis with respect to annuities and other products with benefits sensitive to interest rates considered future insurance and investment cash flows as they would emerge under a reasonable set of future interest scenarios, and if so, what these considerations were. This doesn't exactly give too much of a guideline, but it does indicate which direction the NAIC may be heading.

In 1983 the NAIC adopted Universal Life model regulation that contains a provision for Actuarial Opinions on Interest-Indexed Universal Life policies only. In addition, last year the NAIC adopted a model regulation for modified guaranteed annuities and modified guaranteed life insurance, which are policies with market value adjustments that also require an Actuarial Opinion. This indicates concern of the NAIC about interest-sensitive products.

While this has been going on, New York has been relatively quietly establishing fairly detailed requirements for Actuarial Opinions and Memoranda to be filed on annuities and GICs.

Just as a point of clarification, the Actuarial Opinions that must be filed are similar to the ones suggested in the American Academy of Actuaries. The proposed Recommendation of the Actuarial Memorandum is a New York-only requirement. The Academy suggests that the opinion be filed with the state insurance departments and that an actuarial report, which covers company solvency under both reasonable and plausible scenarios, be given to company management. New York wants to have a subset of what would be the actuarial report showing the reserve adequacy under so-called reasonable scenarios. New York wants to be provided with enough information to determine for itself whether reserves are sufficient.

As another clarification, our committee was not sure where the concept of the valuation actuary was going to end up. It did seem that the concept of the valuation actuary, as essentially determined by the American Academy of Actuaries and other bodies, would require much more extensive testing of the entire company. Therefore, the committee suggested, and the regulations are written, that the actuary instead be called the qualified actuary in New York.

To give a bit of background information, the New York Insurance Department has had some provisions for filing Actuarial Opinions and Memoranda since 1982. Basically, New York was concerned about the Dynamic Valuation Law as it was and did not want companies to use high interest rates in determining their valuation reserves unless it could be proved that the reserves were adequate.

Therefore, it gave the companies the option to use either fairly conservative reserves or to use the more liberal reserves as long as Actuarial Opinions and Memoranda were filed with New York State. The rules for these filings were very loose, allowing the companies a great deal of leeway in their actuarial documents. In the first year about six companies took advantage of this offer. Last year, about 40 companies filed.

The Actuarial Opinions and Memoranda have proved somewhat useful. However, the Insurance Department still had many concerns. The quality of the reports has varied considerably. In addition, many companies chose not to file the Actuarial Opinion, so the Insurance Department did not get the additional information from most companies that do business in New York. In particular, the people in the Insurance Department were worried about single premium deferred annuities after Balwin-United and Charter. Therefore, with industry input, a law was passed in 1985 that required Actuarial Opinions and Memoranda from all companies doing business in New York. The proposed regulations have recently been released. They were open for public comment until today, so the final regulations have not yet been published. I assume there will not be too many changes from the latest draft of the regulations.

I chaired an advisory subgroup of about 20 people from various companies and organizations that provided the input on the Actuarial Opinion and Memorandum for New York, which is why I am standing here talking to you now. Both the ACLI and the Life Insurance Council of New York invited their members to nominate people to be representatives appointed by the Insurance Department to be in this advisory subgroup. Our committee tried not to reinvent the wheel. In general, we tried to be consistent with work being done by other groups, such as

the American Academy of Actuaries in its proposed Recommendation 7 on the Valuation Actuary. This group met off and on for almost a year to develop proposed regulations, with a great deal of input from the New York Insurance Department, particularly Mr. Robert Callahan, who is New York's chief actuary. He assisted by suggesting points to be considered in the regulation and by pointing out problems with Actuarial Opinions and Memoranda he has received up to this point.

Members of the Insurance Department adopted most (not all) of this group's recommendations. For example, the majority of the committee did not want to require board of directors' approval of the person or persons who would be the qualified actuary at this time. The Insurance Department overruled the committee in the proposed regulations, because it felt that board appointment would give the actuary more power to obtain the information and support he needed, and it would also serve as a notice to top company management as to the importance of the qualified actuary's job. It might also give the actuary a little more independence—more like an internal company auditor. The committee did not dispute this; it just wanted a little more work done on the concept of the valuation actuary first. However, the vast majority of the committee's work was adopted as it was written, and the committee as a whole was comfortable with the resulting regulation.

One of the things the advisory group had to determine was which direction the regulations would take. The current actuary doing valuations has the rules fairly thoroughly spelled out for him; he just has to make sure the company follows

these statutory rules in setting up reserves. There is merit to this approach, in that it provides consistency among companies and does not give management of a company a chance to try to influence the level of the reserves.

This approach also had several problems. One was that the role of the valuation actuary is to determine what needs to be tested for his own company's products, not to have everything dictated to him. Another major problem was that our group simply could not come up with all the rules that would be needed. For example, what is the best method to project investment cash flow on common stocks or real estate? We solved this by stating that the actuary should do what he thinks is best and just explain why he did what was done.

The other extreme is the English definition of valuation actuary, where the actuary is an integral part of the management team and has a lot of freedom. Under this definition, few, if any, rules would be specifically spelled out. We obviously didn't settle on this approach, considering that the regulation is 85 pages long plus appendixes. That may eventually be where the role of the valuation actuary is headed, but the majority of the committee felt that we had to get there one step at a time. So I would say we settled for what I've labeled a watchdog approach, where the job of the qualified actuary is to safeguard the health of the company and bark when the company may be headed for trouble. This point of view would allow the actuary some freedom but still set up fences or guidelines for the actuary to work within.

On to the more practical aspects. First, let me answer the five Ws about this regulation. Who does this regulation apply to? It covers all companies doing business in New York. This not only includes domestic New York companies, but

anyone who writes in New York, anyone who is an authorized reinsurer, and fraternal insurance societies. Roughly translated, everybody who writes anything in New York having to do with annuities and GICs should be filing an Actuarial Opinion and Memorandum. There is an out for small companies. They can get away with not filing if they have less than \$25 million in reserves in annuity and GIC business, if this is less than 10 percent of the total reserves of that company. However, even these companies not filing will have to hold an additional 20 percent over the minimum reserves that could have otherwise been held.

What businesses must the Actuarial Opinion include? All GICS, annuities, and annuities certain are included. This includes supplementary contracts that look like annuities, either those that involve life contingencies or that guarantee interest rates for a period of time. It also includes group survivor income benefit insurance in the payout stage, because this is also effectively an annuity.

When must the documents be filed? The Actuarial Opinion addresses the sufficiency of the reserves that are listed in the Annual Statement. Therefore, to be technical about it, the Opinion preferably should be filed before the Annual Statement in order to get approval of the reserves to be put into the Annual Statement. As a practical matter, however, most companies will be working on the numbers for their actuarial documents at the same time as the Annual Statement is being prepared, so simultaneous filing of the Actuarial Opinion and the Annual Statement is permitted. There may be some companies whose accountants will not sign off on the Annual Statement until approval is given to the reserves by the New York Insurance Department. In these cases, I would recommend working with New York State to have it rule the reserves acceptable

(or state any objections) shortly after the Actuarial Opinion and Memorandum is filed. A second important point about when this must be filed is that it must be filed in 1986 for 1986 business and for any business valued on a change-of-fund basis, which means if you haven't started work and you write any business in New York, you've got a very busy few months ahead of you.

Where are the Actuarial Opinions and Memoranda filed? The documents are filed with the Actuarial Valuation Bureau. The Annual Statement is normally filed with the Statistical Bureau, so the two documents will be going to different departments. It will speed the process along if both are filed in the right place. Another point on where the documents are being filed is that this is only a New York requirement. Therefore, if you are not a domestic New York company, you can choose to file one Annual Statement in your home state and a second Annual Statement for New York showing higher reserves if you are not yet prepared to do all the work needed for Actuarial Opinions and Memoranda on the Annuity and GIC business. Over the long term this is not recommended, because what New York is requiring is what you should be doing for the business: testing the proper level of reserves by doing asset and liability matching. However, for a short-term approach it is an option to hold the higher reserves in New York only if test procedures cannot be developed by 1986 year end.

Why the Actuarial Opinion and Memorandum? It's not a cure-all, and the Insurance Department is not looking at it as such. However, it does provide additional information to both regulators and to the management of the company as to the health of the company. As Mr. Richard Schweiker, President of ACLI, stated at the Society of Actuaries' Chicago annual meeting, the actuaries would be able to do a fine job if management would only let them do it. However,

ultimately it is the management of the company that is responsible for its solvency and can do something the actuary has not tested for, which can cause problems for the company. However, the actuary can play a role in pointing out potential problems.

Now on to more specifics. As I stated before, the quality of the material sent to the Insurance Department has varied considerably. Mr. Callahan of the New York Insurance Department has pointed out a number of problems in the documents that he has received. Some of the problems with the Opinions he's received are discussed here. All companies are disguised to protect the guilty, the misunderstood, and me from libel.

One of the problems has been what can be considered a lack of cooperation. Actually, the example Mr. Callahan used for this may be considered more a series of clerical errors. A consultant filed an Opinion for a company and accidentally did not attach the Actuarial Memorandum. The Insurance Department requested this document. This request did not get top priority, and it wasn't until a month later that somebody mailed what was supposed to be the Memorandum; accidentally, all that was mailed was the Actuarial Opinion again. Again, the New York Insurance Department requested the proper documentation. It took another month or so to get the Memorandum. Mr. Callahan had some questions, and there was another period of time before the consulting actuary could arrange to meet with him. Therefore, it took over half a year to provide satisfactory documentation to the Insurance Department for this company's reserves. Members of the Insurance Department were understandably annoyed at this. Therefore, I would recommend that everybody who could be involved in the process be aware of the importance of having the Insurance Department happy



with the reserves that affect the Annual Statement. Because of this incident, the regulation specifically states that lack of cooperation is one of the reasons that the Insurance Department can refuse to consider an actuary qualified to make Actuarial Opinions in New York.

Another problem that came up was on the qualification of an actuary. One actuary who signed an Opinion was not a Fellow of the Society of Actuaries and had not received prior approval to sign the Actuarial Opinions. The people in the Insurance Department had to attempt to establish his qualifications, and in the meantime, could not approve the reserves. To avoid this, I would recommend that actuaries who will be signing the Actuarial Opinion send in their qualifications to the New York Insurance Department before the end of the year.

Another problem that has arisen is delayed filing of the Actuarial Opinion. Some companies' Annual Statements used the lower reserves numbers, but there was no backup to show actuarial justification of such reserves. The New York Insurance Department people are reasonable, and if you have a problem, you can request an extension to file the actuarial documents. However, they do get annoyed if they receive just the Annual Statement without the Actuarial Opinion and Memorandum and without any notice as to when these documents will arrive.

There have been some problems with Actuarial Memoranda that have been received. One of the problems is that not enough information was provided in order for the Insurance Department people to form a conclusion as to the adequacy of reserves. This gets into how much information one really should provide in the Actuarial Memorandum. There are certain items that a company may want to keep confidential for competitive reasons. The company has the

option of requesting that all or part of the Memorandum be a confidential document. The Insurance Department is not looking for company secrets—just for enough information to form a conclusion. The company can keep some information as backup, which the Insurance Department can then request, normally on a confidential basis.

There was at least one company that, in its Actuarial Memorandum, only provided information for the current year. This is not acceptable. The regulations now require the cash flow analysis to go out to when the majority of insurance cash flows run out. For most businesses, a period of 10 years appears satisfactory.

Another company, for its SPDAs, used its current interest rate for one year but then dropped to the guaranteed rate; however, in its lapse assumptions, it assumed current lapse rates would continue. This is not recommended. The new regulations specifically state that the assumptions of the economic scenarios and the insurance and investment cash flows be interrelated.

Another problem that has appeared is that the investment cash flows do not vary with economic scenarios. One reason for this may be that many companies have not yet answered who is responsible for developing investment cash flows; the actuary or the investment officer. The Insurance Department doesn't care who does it. However, the regulation specifically says that it is the actuary's responsibility to make sure that the investment cash flow is reasonable and that it varies with the economic scenarios, such as including provisions for calls and mortgage prepayments.

One question is what will happen with qualified opinions. My immediate reaction to this is that all opinions are qualified, since nobody can predict the future and the actuary cannot be 100 percent sure that the company is in fine shape. However, if an actuary does have any real doubts as to the adequacy of reserves, he should so specify. I have never seen a qualified opinion, so I would hope that means that all the companies that have filed Opinions are in good shape. However, the qualified opinions would serve the purpose of alerting both management and the state to potential problems, and they could, it is hoped, help avert some company insolvencies.

Another question is about what will happen when the Actuarial Opinion is unsatisfactory to the New York Insurance Department or when no Opinion is filed. The Insurance Department, in these cases, can ask for further tests. It can also require higher reserves. The state can also take action against the actuary when the Opinion is unsatisfactory. It can refuse to allow him to sign Opinions for New York State. It can also ask the American Academy of Actuaries to declare the actuary unqualified to be a valuation actuary. The latter step seems drastic, but it is one of the reasons that the regulations state that qualified actuaries must be MAAAs—so New York can have a forum to regulate the actuaries.

On to minimum reserve in New York. Again, if your annuity business is fairly small (under \$25 million) and the annuity and GIC reserves are less than 10 percent of the total reserves of the company, the company has the option of not doing anything and holding 20 percent higher than minimum reserves for the annuity and GIC lines of business. If the annuity and GIC business is greater than those numbers, that company must at least do a Macaulay duration test of assets

versus liabilities. If the assets differ from the liabilities by less than 3 years, an additional 15 percent of the minimum reserve that can otherwise be held is the reserve standard. If the Macaulay duration is greater than 3 years, the reserves that must be held are the greater of 20 percent of the otherwise minimum reserves and an alternate basis specified in the regulation. This alternate basis requires a recalculation of annuity reserves on a much more conservative basis and for many companies may result in a larger additional reserve than the 20 percent. The light at the end of the tunnel is that if you do file a satisfactory Actuarial Opinion and Memorandum, no matter what your Macaulay durations say, you can hold the reserves that you feel are adequate, as long as they are equal to or greater than the minimum reserve standards.

Although the regulation does attempt to give guidelines as to Actuarial Opinions and Memoranda, there were a number of issues that were left open. This was either because we felt the actuary should decide what the best tests for his company's products should be or because we could not agree (or, in some cases, even come close to determining) what the right answer was.

I thought it instructive to find out how the number of companies that will be filing in New York have done certain things. A survey was sent to the 18 company members of the advisory task force, and 14 people replied. The survey was anonymous, but considering the makeup of the committee, I would say it generally reflects the opinions of medium to large companies. The results of my survey are given in Appendix A.

From the results of the first two questions, it appears that most companies will be following the proposed Recommendation 7 from the American Academy of

Actuaries, which suggests that there be only one valuation actuary in a company. Most of the companies surveyed generally have the actuary who is responsible for the specific products write the accompanying memorandum for those products.

A number of companies appear to be ignoring the C-2 risk of mortality deviations. This can be because, for many annuity products, the C-2 risk is minimal to nonexistent. However, it should be a consideration for annuities in payout, since deviations in mortality can adversely affect the liability cash flow stream.

The C-1 risk of default is also not being handled in the same way by all companies. This can be because, for the three companies ignoring it totally or for the two companies that are letting the MSVR handle it, their assets are of such high quality that the risk of default can be ignored. However, I know a number of companies that have studied this issue and concluded that a basis point holdback, perhaps varying by the quality of the underlying assets, makes sense.

Most companies surveyed trigger calls and prepayments based on economic scenarios, which, if the computer capacity is available to do it, seems to be the most logical method.

All the surveyed companies compute lapses based on economic scenarios. This is the method the committee agreed made sense, and as such, it is so recommended in the regulation.

The treatment of negative cash flow differs between companies, presumably to be consistent with what the company would actually do in cases where a product or line of business were in a deficit position.

The reinvestment strategy also varies among companies. On the surface, using the current strategy does appear to make the most sense, but this may not be true in all instances. Since it is assumed in the testing that there will be no new business, a company must test a closed, probably declining, block of business. The reinvestment for this may not be the same as that used if new business were assumed.

The companies surveyed split on who determined the investment cash flow—the actuary or the investment officer. As I stated before, the actuary does have ultimate responsibility for the reasonableness of the cash flow. However, if the investment department works closely with the actuaries and understands the concept of what is being measured, the investment officer may be better qualified to do the investment cash flow analysis. Some companies have solved the problem by having actuaries in their investment departments.

In the regulation, the question of whether forward commitments would be included was left up to the companies. An argument in favor of including them is that commitments are an obligation of the company when made. One reason against including them is that all the details necessary to do a proper analysis may not be available when the testing is done.

It was interesting to find that, despite the recommendation in the regulation that seven scenarios be tested, some companies are testing less. This is allowed if a

satisfactory explanation is provided to the Insurance Department as to why the recommendations were not followed. The largest number of scenarios tested was 21.

Once the testing was done, it was left up to the actuary to decide if the results made sense. Of course, members of the New York Insurance Department have the option to overrule, but the original judgment call is the actuary's. It appears that most of them are going with fairly flexible rules at this point. It probably depends on the likelihood of a scenario's occurring as to whether additional reserves should be set up. As one actuary pointed out, you're probably in trouble if the level interest scenario shows inadequate reserves. However, a case may be made that if one of the scenarios that the actuary feels is fairly unlikely to occur shows some shortfall, the overall reserves are still reasonable.

Inverted yield curves are important in testing products such as SPDAs where the customer can surrender at book. It appears that most companies surveyed recognize this and are testing inverted yield curves, even though it adds complexity to the testing process. The starting rate for testing must be reasonable. All the methods listed—current Treasury yields, current investments, or recent investments—should produce similar results.

Originally, Mr. Callahan wanted to specify the classes of business to be tested. However, the results that were received on this question reflected the problem the committee had in trying to develop proposed regulations—there were 14 different answers to the question about the definition of class of business. The most common method is to test along the same product breakdowns as are used for investing. Some companies do invest separately for

each product, whereas others take advantage of convexity and offset a short liability, such as GICs, against longer liabilities, such as SPIAs.

The next set of answers may reflect the makeup of the group surveyed rather than the industry as a whole. The majority of the committee were from larger companies that have spent some time examining the issues involved with Actuarial Opinions and Memoranda. Of this group, most are having an employee versus an outside consultant do the actuarial documents, and most are developing the testing programs in-house. Most companies were still working on improving their systems as of the survey date, which was last month.

As you can tell, there was not that much unanimity on too many issues, which probably is why we had spent so much time writing proposed regulations. I'm not saying that a company should follow what the majority of this group did for all of the above topics, but the survey does give an idea as to what other actuaries thought were proper answers.

Now that New York has this regulation with regard to annuities and GICs, where does it go from here? It has already taken the first step. In 1986 it passed a law that allows modified guaranteed life insurance in New York. However, an Actuarial Opinion and Memorandum must be filed on it each year. Regulations have not yet been started for this, but I assume they will be similar to the annuity regulations. As more experience comes in on the annuities and on the modified guaranteed life, I'm sure the regulations will be updated. This year, the Life Insurance Council of New York is working on a single premium life bill that, if passed, will sweep this into the list of products on which companies must file actuarial documents. In the future it is possible that the law will expand to



other products, especially interest-sensitive ones such as universal life. Once you get that far, it seems that the Actuarial Opinions may eventually cover all the business of the company. This, of course, is speculation on my part, but it does seem to be the direction in which we are headed.

Will other states follow New York's lead? They are watching what New York is doing very closely. New York has the advantage of having more actuaries on staff, so it may be better able to handle analysis on the Actuarial Opinions and Memoranda it receives than a number of other states. However, if the information that New York gets from the Actuarial Opinions and Memoranda it receives proves to be very helpful, I would tend to say that other states may follow its lead. If this happens, the role of valuation actuary will be very much expanded.

This law is already having an impact on how some companies operate. The buzzword of a couple of years ago was AIM: actuaries, investment people, and marketing working together. The new term may be VIPs: valuation, investment, and pricing people working together to better understand one another's concerns. A company's management might not be too pleased if there were no communication to have the valuation actuary determine at the end of the year that the company must hold additional reserves because of risks the pricing actuaries or investment department took. For example, if the actuary really priced for a 200 basis point holdback on a product, but the pricing people decided to have a 25 basis point holdback, even if they plan to go back to a 200 basis point margin in the future, the valuation actuary must project insurance cash flows using the 25 basis point holdback. This could cause significant problems for some companies. Similarly, if the investment department has invested all the annuity money in

GNMA pass-throughs, the valuation actuary must assume that GNMAAs will prepay at different rates under different scenarios and may discover that the investment cash flows are inadequate to cover expected insurance cash flows, especially in a declining interest environment.

Instead of surprising management at year end, it is recommended that the valuation actuary test at various points in the year to see how things are going. One large insurance company has a valuation committee made up of senior-level people from the valuation, investment, and pricing areas working on complying with the New York requirements. This is a recommended approach—having the three areas work together for a better understanding and, ultimately, possibly better profitability to the company, obtained at less risk.

There is still a tremendous amount of work to be done on the valuation actuary concept. However, if, as in New York, the actuaries and the regulators continue to work together, there is tremendous potential for the actuary to play an important role in measuring the risk and in setting appropriate reserves of insurance companies.

## Appendix A

### Results of September 1986 Questionnaire on

#### Actuarial Opinions and Memoranda

(14 companies responded)

1. How many actuaries sign the actuarial opinion?

One—	11
More than one—	3
  
2. How many actuaries are mentioned in the actuarial memorandum?

One—	3
Two—	5
Three—	3
Four or more—	2
  
3. Are variances in the mortality tested for the actuarial memorandum?

No—	7
Yes—	6
Not yet decided—	1
  
4. How is the default risk handled?

Ignored—	3
MSVR—	2
Holdback—	6
MSVR and holdback—	1
Not yet decided—	2
  
- 4a. If there is a basis point holdback for default, how many points?

Less than 25—	2
25 or more—	1
Varies (unspecified)—	4
  
5. How are calls handled?

Ignored—	2
Assume call at first call date—	1
Economic trigger—	10
Not specified—	1

6.	How are prepayments handled?		
	Ignored—		2
	Use one scenario to determine—		1
	Varies with economic scenario—		11
7.	How are lapses computed?		
	Based on economic scenarios (for example difference between market rate and credited rate)—		14
8.	If there is negative cash flow, how is it treated?		
	Negative investment—		2
	Varies with investment strategy—		2
	Borrowing at short-term rates—		3
	Borrowing at short-term rate plus a premium—		1
	Borrowing at long-term rates—		1
	Borrowing (unspecified)—		4
	Unneeded—		1
9.	What criteria are used for reinvestment?		
	Same as current strategy—		6
	Rebalance immunized portfolio—		4
	Depends on scenario—		3
	Reinvest short—		1
10.	Who determines investment cash flow?		
	Actuary—		7
	Investment officer—		5
	Combination of actuary and investment officer—		2
11.	Are forward commitments included?		
	No—		8
	Assets only—		1
	Assets and liabilities—		4
	For some products—		1
12.	How many scenarios are tested?		
	Five or less—		5
	Six to Nine—		4
	Ten or over—		5

(Note: Most of these will report less than that to New York State.)

13. What criteria are used to determine if additional reserves are needed?

No negative results on reasonable scenarios—	2
No test can fail unless aggregate test okay—	1
Can fail 1 of 7 tests—	1
Judgment: depends on magnitude—	1
if "no change" scenario failed, problem —	1
unspecified—	4
Not yet determined—	4

14. Is the yield curve reflected?

No—	5
Yes, test inverted yield curves—	8
Some products yes, some no—	1

15. How is the starting rate determined?

Treasury yields—	1
Yield in portfolio—	1
Rate on comparable current investments—	2
Rate on recent assets purchased—	10

16. What is the definition of class of business used?

14 different answers—answers were dependent on how each company ran its business. Generally, companies treated segments for investments as separate classes; for example, one company has 6 segments:

- a. GIC and non-par group
- b. SPDA
- c. Structures settlements
- d. Par group
- e. IRAs
- f. Other individual annuities

Another separated GIC in separate accounts but combined SPDAs and SPIAs, since this was how it was invested.

17. Is the actuary signing the opinion a company employee or a consultant?

Company employee—	13
Outside consultant—	1

18. Has the company bought a software package, or is the program for testing developed in-house?

In-house—	11
In-house plus some outside software package used—	2
Software package—	1

19. Is the company ready to do the required testing now, or are plans still in the development stage?

Ready now—	2
Ready, but doing enhancements—	7
In development stage—	5