1996 VALUATION ACTUARY
SYMPOSIUM PROCEEDINGS

SESSION 31

Regulatory Expectations from Asset Adequacy Analysis

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REGULATORY EXPECTATIONS FROM ASSET ADEQUACY ANALYSIS

MS. DONNA R. CLAIRE: I am here to introduce a distinguished panel of actuarial regulators to answer the question, "What are the regulatory expectations from asset adequacy analysis?" I had posed to them specific questions, such as when regulators review a company's opinion and memoranda, what are the things they are looking for? What are the things that haven't been done as well as they like? What do they feel can be improved on in the process? And how does the process itself work?

The first speaker will be Bruce Sartain of the Illinois Insurance Department. Illinois has reviewed a number of memoranda, and he will explain certain areas where improvements appear warranted. He is also standing in for Larry Gorski to give us a preview of what has fondly become known as the "Halloween Surprise." That's the letter that Illinois sends out each fall to valuation actuaries.

The second speaker is Hal Phillips of the California Insurance Department. He is standing in for Daphne Bartlett, who is now part time with the California Insurance Department, and is currently attending a wedding off the coast of England. California has reviewed a number of actuarial opinions and memoranda, so it has a strong sense of what it prefers.

Our third speaker is Frank Dino, currently of the Florida Insurance Department. He is no stranger to this audience. I have invited him here especially to tell us what Florida is doing with its term insurance requirements and any other area that would be of interest to valuation actuaries.

MR. BRUCE D. SARTAIN: I understand Larry Gorski spoke at the previous session. He had to leave so I am going to speak for the Illinois Department. My talk is divided into three areas. First, I'll give you an idea as to what will be in Larry Gorski's Halloween letter, then talk about the department's expectations as to actuarial memoranda, and finally our expectations as to actuarial opinions.

The one reason I am starting with the Halloween letter is because it ties in with the regulation on insurance with nonlevel premium or nonlevel benefits, commonly known as Regulation XXX, and the recent developments in Illinois on XXX. For all practical purposes we have adopted XXX. It will actually be in the *Illinois Register* on September 13 if everything goes according to plan. The part that most people are, of course, most interested in is the effective date. I am going to read it just in case any of you are not familiar with it:

> The applicability date of this part is January 1 of the calendar year immediately following the adoption of substantially similar requirements by states with an aggregate population of at least 51 percent of the total population of the United States of America, according to the most recent general Federal census.

The most commonly asked questions about this language that I have heard so far have been, Are states that have already adopted this or similar regulations included in the 51%? And the answer to that is yes. And, What does it mean for regulations to be "substantially similar" to XXX? The Illinois Department will have a letter coming out in the near future that will detail what it means for a regulation to be "substantially similar." I'll run down a few of the highlights now.

The requirements that would have to be part of a regulation for it to be considered "substantially similar" to XXX would be the following:

- The statutory reserve must be the greater of a segmented reserve and a unitary reserve.
- The segments would have to be determined by comparing changes in the gross premium to changes in the valuation mortality rates.
- It would have to apply to both term and term-like universal life products.
- The deficiency reserve safe harbor would have to be no greater than five years.
- The effective date would have to be prior to or simultaneous with the Illinois regulation.
- The minimum valuation mortality rates would have to be specified rather than left to the discretion of the actuary.
- The basic mortality rates and selection factors would have to produce reserves at least as large as those in the Illinois regulation.

Again, these points will be detailed in a letter that will be forthcoming.

Moving on to other parts of the Halloween letter: it will deal with some relatively new products and assets. The one that I have heard the most about has been the equity-linked annuities, and how to reserve properly for those products. There is a meeting coming up between the Illinois Department and the Illinois life companies that are interested in this product. The purpose of this meeting will be to lay the groundwork for the development of a regulation that will deal with valuation as well as nonforfeiture, product development, and advertising issues.

At a minimum, the formula reserve for these annuities would have to be tested via asset adequacy analysis, even if the company qualifies for a Section 7 opinion.

The smokers annuity is another relatively new product. This is an annuity that offers higher payouts to long-time smokers. We have had one company file a product like that in Illinois. There can be no adjustment without commissioner approval to the valuation mortality for these products regardless of any higher mortality expectancy.

A relatively new asset is the short-term catastrophic bond. The July 30 issue of the *Financial Times* has an article about these bonds. They are short-term bonds that are issued by property and casualty companies, where the principal may be lost. In the example of the specific bond issue talked about in the article, if the company experiences claims over a billion dollars as a result of a single hurricane, then the holder of the bond can experience a loss of principal. These may not be appropriate for backing short-term liabilities due to this risk of loss of principal.

The second topic I am covering is the review of actuarial memoranda. I am going to start with examples of problems. These are problems that we have encountered in reviewing memoranda and specific things that we have not accepted. I am then going to move on to the areas we concentrate on when we review memoranda, and finally how we decide which memoranda to review.

Beginning with examples of problems, one is inadequate product descriptions. It would not be enough to say, "The company sells both traditional participating and universal life." We would

consider that an inadequate product descriptions section. We would want extensive descriptions of, for example, current crediting rates, surrender charge patterns, guaranteed rates and the length of those guarantees, bailout provisions, and so on.

An example of methodology we have not accepted is modeling collateralized mortgage obligations (CMOs) as residential mortgages. The company that did this did not have the software to adequately model CMOs so it treated each CMO as a residential mortgage. The obvious problem with that is, if you model CMOs as residential mortgages, you are assuming you will receive principal repayments, but the tranches that the company owned were likely to have no principal repayments until after the modeling period was completed.

Another example of unacceptable methodology is adding reserves to present value numbers at the end of the modeling process. What one company did was to begin with its formula reserves and match those formula reserves with assets. The company projected future cash flows to the end of the modeling period, and ended up with an ending value surplus. The company then took the present value of that ending surplus and *then* added in the asset valuation reserve (AVR). So the company had a column of present value of ending surplus numbers, a column of the AVR, and added those together to come up with the final present value of ending surplus. We did not accept this methodology. The correct procedure would be to match whatever AVR you are going to use with assets at the beginning of the period and then model it through the process.

Yet another example of something we find unacceptable is indicating that additional reserves are necessary but not establishing them due to insufficient surplus. The regulation clearly requires that, if the extra reserves are deemed necessary, they have to be set up.

Not including any overhead expenses in the projections is also unacceptable. The only methodology we have not accepted when assigning overhead expenses to existing business and future new business is assigning it all to future new business and not modeling any in the cash-flow testing.

It is also unacceptable to do a Section 8 opinion (i.e., perform asset adequacy analysis) one year, establish additional reserves, and the following year do a Section 7 opinion (i.e., not perform asset adequacy analysis), and drop the additional reserves. This could happen if the company is a category C company and is only required to do a Section 8 opinion once every three years. It could also occur if the reason the company did a Section 8 one year is because of their priority status, and that is no longer applicable the next year. In all likelihood in this scenario we would require a company to do a Section 8 opinion if the company attempts to drop those additional reserves.

Setting up additional reserves equal to the difference between a gross premium reserve and the statutory reserve when the gross premium reserve is greater than the statutory reserve would be considered inadequate. For example, if the statutory reserves of the company are $10 million, and the actuary does a gross premium valuation and comes up with a reserve of $11 million, it would not be sufficient to set up additional reserves of $1 million. The reason is that the gross premium reserve is based on best estimates, and by definition, that is not high enough to cover moderately adverse conditions.

We would not find it acceptable to model common stock without sensitivity testing the return. The return on common stocks is unpredictable, and it makes common sense to sensitivity test that return.

Finally, it is unacceptable to assume that a particular line of business terminates as of the valuation date to avoid modeling it. If the termination of the business is not planned, it should not be assumed.

I hope that gives you an idea of what we have not allowed over the past two or three years.

The second area relating to the review of memoranda is the procedures that we use when we review memoranda and the areas that we specifically concentrate on. Obviously the memorandum would have to comply with the regulation and standards of practice. When I review memoranda, I pay particular attention to Standard of Practice Number 22.

With regard to assumptions, they would need to be reasonable with respect to recent company experience, or reasonable expectations of future company experience, or relevant industry averages from outside sources. Some examples of outside sources that we rely on for both checking the assumptions and verifying acceptable methodology would be the Practice Notes; the *Dynamic Financial Condition Analysis (DCFA) Handbook*; memoranda of similar companies; published averages or estimates in places such as *Best's Review* which does surveys almost monthly on things like persistency, expense ratios, and general industry trends. We also look at the Life Insurance Marketing and Research Association (LIMRA) studies for lapses at Tillinghast-Towers Perrin updates for competitor rate formulas, and at Bloomberg. Basically we look at anything that we come across that can give us information on a company, in general, particular lines of business, or particular asset classes.

The asset assumptions that we concentrate on are, first of all, reinvestment assumptions, such as assuring the assumed reinvestment strategy matches up with the recent history of the company and that the rate of return assumed for the different asset classes are reasonable. We also look at default rates and prepayment assumptions for mortgage-backed securities.

On the liability side we concentrate mainly on the crediting rates, and whether they match up with recent experience, whether the competitor rates make sense for the particular line of business and the target market the company is in; and whether the lapse rates are consistent with experience.

We would also expect that the most material assumptions be sensitivity tested. For example, if a company has a large amount of CMOs, especially if they have high flow uncertainty index (FLUX) scores, we would expect that the prepayment assumptions on those be sensitivity tested.

Another area we look at is clarity and common sense. If something is unclear or does not seem to make common sense, then we will question it in a letter to the appointed actuary.

We also look at additional reserves and when they should be added.

One issue is a lot of people feel that the pop-down scenario is extremely unlikely, and so they do not really take it seriously. I guess I have always seen some merit to that view. However, there was an interesting article in the August 5 *National Underwriter* in which they talked with the chief economist for Donaldson, Lufkin, and Jenrette and he predicted that long-term rates would go down to 4% within the next 18 months and stay down until the year 2010. His reasoning was that the population of the U.S. will continue to age, and older people do not buy as many high-ticket consumer items as younger people. Therefore the economy will slow and interest rates will go down and stay down. So it's worth taking note that at least one respected economist is predicting exactly the pop-down scenario.

One other area that Larry Gorski has asked me to mention was "hot topics." A year or two ago Larry was focusing quite heavily on synthetic guaranteed investment contracts (GICs), and now he has been and will continue to focus on equity-linked annuities.

Next I would like to talk about how we decide which memoranda to review. The most obvious place we look is at the opinion itself. If there are additional comments in the opinion, or if there are additional reserves listed in the opinion, we are more likely to review the memorandum.

We look at the memorandum executive summary (MES). In 1995, Larry Gorski reviewed all licensed companies doing a Section 8 opinion and followed up on many of them. This year we did not use it as much, but it was more due to time constraints and because there were enough memoranda to review without reviewing the MESs. But that is definitely something we plan on using in the future.

We also do follow-ups on memoranda we received in previous years. For example, if we looked at it before, and we asked the appointed actuary to change something, or we noted something we wanted to follow-up on, we are more likely to continue to request it for a few years.

We also look at a memorandum when there is concern expressed from other areas of the Illinois Department about some aspect of a company. For example, we have a regulatory action section that

deals with less financially healthy companies. This year they asked us to look at the modeling of a particular company's CMOs because they were worried that they were quite volatile.

Risk-based capital (RBC) is another trigger area. The lower the RBC ratio of the company, the more likely we are to review the memorandum.

Additionally, the more derivative instruments a company has, the more likely we are to review their memorandum, and the more CMOs with high FLUX scores a company has, the more likely we are to review it.

This year we also looked at all Illinois domestic companies that did Section 7 opinions to decide whether or not they should be doing Section 8 opinions. We looked at items such as their RBC, capital and surplus, net income, CMO holdings, their priority status, complaint ratios, and what the rating agencies had to say about them. Of all the companies we looked at, we asked one of them to do a Section 8 opinion.

With regard to the opinions themselves, the first thing we look at is whether the language in the "statement by the person relied upon" matches the language in the opinion relating to what the appointed actuary relied on the person for. In cases where they do not match, we have asked that one of them be changed so they do match. We have also had instances where the person relied upon in the opinion was not the same person who signed the "statement by the person relied upon." Except under very unusual circumstances, this would obviously not be acceptable.

We do not accept blind reliance, which is relying on someone without reviewing the information for reasonableness. In the last several years this has sometimes been a problem. This year I don't believe that was a problem.

We have had a long-standing requirement that 95% of the reserves be tested. In previous years we have had some problems in this area but none this year. We want to emphasize that testing 95% does not mean that you have to cash flow test 95%.

We also require that the specific language recommended in the regulation be used unless there is a good reason for not using it.

We also check if the reserves listed in the opinion match the reserves in the annual statement. There have not been many problems in this area.

I hope that gives you some insight as to what we emphasize in the review process.

MR. WM. HAROLD PHILLIPS: Daphne agreed to be on the panel before she knew when it would be held. She is in England attending a relative's wedding, so I was chosen to pinch hit for her.

Daphne has been reviewing these memoranda received by the California Department for the last two years. As a result she has been exposed to a wide variety of different ways of performing and presenting the results of asset adequacy analysis.

This is her perspective of how the analyses are conducted and how they might be improved.

Virtually all of the memoranda are good. Some are excellent. Many of the thoughts presented here reflect concepts included in these memoranda, which are worthy of being applied across the board. These are Daphne's comments and not necessarily those of the California Department.

Daphne planned to discuss the objectives; cash-flow testing per se and what we do in California, what we look for, where improvements may be needed, failed scenarios, and suggestions for change.

The fundamental objectives of asset adequacy analysis are first, for the appointed actuary to determine if reserves are adequate under different interest scenarios and under variations in other assumptions such as lapse, and mortality and expenses, and second, to provide comment and suggestions to management. That's pretty straightforward. But from our review it seems as if some, by no means all, actuaries consider it just another routine year-end financial exercise, another regulatory hoop to jump through. Sometimes we even get the sense that some tinkering might have been done with the assumptions in order to eliminate negative results.

Daphne has worked in the insurance business for many years and is well aware of the pressures that are placed on actuaries at earnings time. But if regulation in the U.S. is ever going to move away from required formula reserves, and rely more on actuarial judgment, appointed actuaries are going to have to stand up professionally and, when appropriate, insist that additional reserves be established, even if that's unpopular with the boss. So an actuarial memorandum that clearly indicates that the appointed actuary has taken the whole process seriously is one that regulators are going to be more inclined to believe than one that appears to be thrown together to get the project out of the way.

And, as a comment to my fellow regulators, it is important for all of us to remember that the substance of the memorandum or opinion is what is important, not whether specific words or specific formats are followed.

As you know, cash-flow testing is only one of the ways of performing asset adequacy analysis. However, we have noticed that, when other methods are used, they tend to get short shrift in the memorandum. Comments are something like: "Clearly this block of business is not interest sensitive, so everything is fine." It is like those study notes that say such and such is true, but you end up spending six hours trying to figure out what is going on. It would be extremely helpful to regulators if the memoranda would discuss the logic underlying the conclusions that everything looks fine, and would provide enough details so that the results are easily comprehensible.

Some companies have material blocks of business where one block requires cash-flow testing, and another does not. Sometimes a memorandum does not discuss each block in detail, but only provides detailed information on the block that is cash-flow tested. This is inappropriate. If a block of business is material to the solvency of the company, it deserves more than a sentence or two.

You might be interested in how we go about selecting companies for review in California. I was in awe of Bruce's methodology. He is much more sophisticated than we are. The first year we requested memoranda from everybody. As you can imagine, this filled up our filing cabinets!

From the beginning we realized that we could not do a complete review of all the memoranda, but for the first year under the new law we wanted to see how the memorandum was being prepared and get a feel for how well the new law was working. I must say, we are very pleased with how well it went the very first year.

Now we thoroughly review all the memoranda on domestic companies. We also select about 50 nondomestics and request and review their memoranda. For 1995 we chose companies that had a high percentage of their assets in CMOs, and those that had a lot of variable business. We also review all the executive summaries. Some will have indications (failed scenarios and so on), which will result in our requesting and reviewing the entire memorandum.

By the way, some companies request that we return the memorandum when we have completed our review. We do not have the clerical resources to do this. However, you should be aware that all memoranda and executive summaries are destroyed at the end of the year, and are not kept in the department's permanent files. We take the confidentiality aspect of this all very seriously.

In general, when reviewing a memorandum we look for evidence that the appointed actuary and company management are taking the asset adequacy analysis process seriously, and will react appropriately to whatever that analysis tells them. This is usually very clear from the way the results of the analysis are presented. More specifically, we use our professional judgment and experience

to determine whether all the major risks are considered and discussed. That does not necessarily mean that every major risk has to be specifically reflected in the analysis. Obviously that is not necessary if its impact is not material. But if this is the case, it should be mentioned.

Where do the assumptions come from? Most of the products today were not in existence 20 years ago, so there is no historical experience on which to base, for example, 20-year lapse assumptions. How did the actuary decide what to use? And how were the assumptions validated? This should be discussed.

There are various areas that could use possible improvements. Most companies are doing a good job, but in striving for perfection, these are the comments that we would make.

Variable products are fast becoming a very important part of the life insurance business. One of the most common statements in the memorandum for a company with a large amount of separate account business is something like, "The entire investment risk is borne by the policyholder, so no asset adequacy analysis is necessary." The statement may or may not be true depending on whether or not a commissioner's annuity reserve valuation method (CARVM) allowance is taken. If it is, we believe that cash-flow testing of the separate account reserves is essential.

Typically in variable products there is no source of funds other than the surrender charges or management fees that can be used to amortize this allowance. This amortization is necessary so that at a point where there are no further surrender charges, the policy reserve is equal to the fund value. What if the value of the funds declines or surrenders decrease such that revenue to the company from these two sources is insufficient to pay down the CARVM allowance? The answer is that additional reserves need to be set up, or alternatively the CARVM allowance should be reduced.

We believe this issue could present a serious future problem -- particularly in view of the potential of a bear market. It is suggested that appointed actuaries consider testing at least two fund growth scenarios, perhaps 0% and 6%, and at least two persistency scenarios.

In addition, it would be prudent to reflect inflation in administrative expenses of the separate account business throughout the projection period. This is a further stress test that your fixed margins coming out on the mortality and expense (M&E) charges are adequate.

Deferred annuities have become a significant part of the insurance marketplace. However, cash-flow testing generally only considers their accumulation phase. Discussion of annuitization, if mentioned at all, will usually indicate that the past experience indicates that only minimal elections will occur, and thus none are assumed. This may not be a proper assumption. It is probably true that minimal elections have occurred in the past. This is perhaps because of the industry's emphasis on life insurance, not on settlement options. Therefore, settlement option purchase rates have not been competitive enough relative to just leaving the funds in the bank or some other investment vehicle and collecting the interest. Why would anybody have an interest in annuitizing if the benefits are so small?

This might not be the case with the new generation of products. I think life insurance companies are going to be very interested in keeping their annuity funds. They will do this by offering more competitive purchase rates, which will result in higher election rates. Shouldn't an appointed actuary consider this?

We believe that sensitivity testing of assumptions other than interest rates should be considered in order to determine the impact of their variation on the results. Many companies are doing this now, most frequently on persistency and mortality. Lots of companies are not.

Appointed actuaries should consider whether it would be beneficial to test the sensitivity of at least some of the following assumptions: default rates; prepayment rates, maybe even on traditional mortgage loans; annuitization rates; and any other assumptions that can have great variability in the future.

One of the questions needing response this year in the executive summary related to sensitivity testing. One response was memorable. The actuary indicated that no sensitivity testing was done as

he was certain that his assumptions were excellent. I am sure most of you wish that you were that confident.

Most of the business produced today is quite different from that of ten or fifteen years ago. Even if a sufficient experience data were available for, say, the 15th year lapse rate, it's not necessarily a given that such rates would apply in the 15th year of a similar product written today. Consequently, it seems important for actuaries to test a range of assumptions to evaluate the potential impact and results in order to avoid surprises. It would not be necessary to do sensitivity testing every year for every assumption; perhaps once every three years would be sufficient. But the existence of such testing in recent years should be mentioned in the memorandum.

While we are on the subject of assumptions, I noted this year that a lot of companies reported that they had updated theirs in order to reflect recent experience. I wonder whether this is proper. It would seem that the assumptions used in cash-flow testing should be "best estimate" over the longer term rather than "most recent." Cash-flow testing is a tool to project, in the general way, long-term results. It is not like setting a dividend scale for next year for a block of participating business where the use of more recent experience is theoretically proper. Appointed actuaries might consider only revising assumptions when it is clear that those currently being used are inappropriate. This may not happen every year.

This is a very controversial paragraph, and these are Daphne's comments. I promised to deliver them.

> For the first time in U.S. history, because of asset adequacy analysis, statutory reserving for life insurance and annuities has not been based on a per policy formula reserve. The regulation now permits reserve insufficiencies in one block of business to be offset by sufficiencies in another. The overall objective of asset adequacy analysis is aggregate adequacy. However, the actuarial opinion and memorandum regulation demands allocation of any additional reserves between major Exhibit 8, 9 and 10 categories. I believe this is incorrect, creating a false impression about the objectives of the analysis, and should be revised.

As I mentioned, I think she'd get quite a bit of argument from other regulators on this.

When it is appropriate, it would be useful for the regulators to see year-by-year cash-flow-testing results in total for each scenario. We recognize that cash-flow tests represent poor approximations of actual short-term budgets. However, it is important for us to know whether a company might have immediate or short-term cash-flow problems under certain scenarios. In some respects, early losses are more important for regulators to be concerned about than later losses, because in the latter instance, the company has tried to make adjustments in the way it does business. If there are early losses, the memorandum should indicate whether surplus is adequate to handle early cash-flow needs, and, if not, how the company might handle them.

Quite a few companies perform their analysis prior to year-end, usually September 30. Other companies performing on December 31 have commented that it is difficult to do all the work they believe is necessary in time to file the opinion. We would agree. It is quite acceptable for companies to do their analysis at a date prior to year-end as long as the impact of changes in interest rates, assets and liabilities between that date and year-end are analyzed or commented upon.

Most of the comments have been quite brief and not very thorough. Actuaries might say: "We have reviewed what has happened in the fourth quarter and everything looks fine." This is of concern because, at least in the last couple of years, quite dramatic changes in interest rates have occurred in the last quarter. These changes could have a significant impact on the interest scenarios and thus on the results of many companies. So I suggest that it would be helpful if the memorandum contained more discussion of why conclusions that were reached, based on September 30 data, are still appropriate for December 31.

Most of the memoranda handle reinsurance appropriately. That is, ceded insurance is not reflected, assumed reinsurance is. However, there's one area where it appears that more attention should be given. This relates to the potential for insolvency of the reinsurer, and the impact of such insolvency on the ceding company. Obviously we don't expect the ceding company to perform asset adequacy analysis on every company to which it cedes business. However, these days it is prudent to perform significant and thorough due diligence on such companies. After all, the ceding company is ultimately

responsible to its policyholders. Due diligence probably does not need to be performed annually. But the fact that it has occurred and the conclusions of the study should be reported each year in the memorandum.

Because certain types of business have longer horizons than others, it is certainly appropriate to have different cash-flow-testing periods from one type to another. However, I get concerned when I see the results of projections extending over a 50-year horizon. How valid can such projections be? I suggest that we consider limiting the projection period to a maximum of 20 years for all types of business. It doesn't seem to be correct to routinely aggregate results when different testing horizons are used. Consider the block of business A, which is tested over a ten-year period, producing losses. A different block, B, tested over 30 years produces gains. Is it proper to add the results of both these blocks together? If there's only a very small percentage of block A business left at the end of ten years, aggregation is probably acceptable. Otherwise it probably isn't because losses emerging from block A after the tenth year would be ignored. The important point here is that the choice of testing period should be justified.

Many of the memoranda we receive contain pages and pages of computer printouts containing a vast amount of numerical detail. This is useless to us. We are not interested in checking all the data. We do not have the resources. It is highly unlikely that management of the company would be interested in it either, and the memorandum is directed at them also. Do not forget the purpose of the opinion memorandum is to give power to appointed actuaries to use their professional skills to determine the appropriate amount of reserves and to insist that they be set up. We want to rely on you. We do not want to second-guess you. We do not need all that paper. The important contents of a memorandum are, in my opinion: (1) a good comprehensive written discussion of the company's asset and liability portfolios and their risks; (2) where appropriate, cash-flow testing results for the total company, year-by-year for each scenario; (3) final, end-of-testing-period results for each sensitivity test. The important part of the memorandum is the written material, and only a few numbers.

I thought you'd be interested in how we looked at failed scenarios. These are my thoughts alone, and of course, every actuary should use his or her professional judgment. If a company does not fail any scenarios, the actuary's work probably is not done. Losses in early years must be considered. If they exit and surplus is not adequate to handle them, there is obviously a problem. The actuary's recommendations on how the situation should be handled should be included in the memorandum. If there is one failure, additional reserves may not be required. The actuary should, of course, comment in the memorandum on the causes of the failure, and advise management.

Additional reserves are more likely to be needed in situations where two or more scenarios fail. The actuary's action with respect to additional reserves would depend on which scenarios failed. If the two were pop-up and pop-down, for example, there is probably cause for significant concern because of the wide diversity of the scenarios. If there are early losses, there might be a greater need for additional reserves. One rationale I have seen frequently for failed scenarios is the comment that this is a very unlikely scenario, and the result is ignored. Alternatively, the actuary might test at some slightly more favorable version of the scenario and have it pass, thus justifying no additional reserves. This is troublesome to me. The required scenarios are not extreme; we've all seen interest rates gyrate wildly in the last decade, and it's not unlikely that increases from a high starting rate or decreases from a low one, might occur. The point is that any failing scenario is important and shouldn't be brushed off.

If a company fails more than two scenarios, additional reserves are probably essential. As a rule of thumb the actuary might consider setting up additional reserves in the amount needed to reduce the number of failed scenarios to two. This amount would be increased to an amount that would eliminate early losses in the two remaining failed scenarios. If this cannot be done, the actuary should consider a qualified opinion. You all may have your own ideas.

Here are a few suggestions for change. (1) Daphne does not believe the additional reserves should be allocated between exhibits 8, 9 and 10. (2) The memoranda contain several certifications from nonactuaries. Daphne suggests that the company be required to obtain such certifications and to keep

them on file but not to include them in the memorandum. This would reduce the large amount of relatively routine information. Instead the appointed actuary could indicate in the memorandum that all necessary certifications have been obtained. In the case of a reinsurer, it would be helpful to include a tabulation of the reserves associated with reinsurance accepted rather than the certifications themselves. (3) Every memorandum includes tables of interest rate scenarios year by year. Since every company starts off with about the same yield curve, and the required scenarios are the same, a lot of trees are being used to produce these tables over and over. All we need is the starting interest rates. The requirements to include the detailed interest rates should be eliminated. (4) Many companies also include detailed listings of assets. These occur in annual statements and do not need to be reported again. (5) Daphne also suggests reconsideration of when asset adequacy analysis is required. There is not much point in requiring testing of seven interest scenarios for a small company on the NAIC "watch list" because it will involve assumptions with little statistical significance. She suggests the NAIC consider requiring annual asset adequacy analysis for all companies, but, for the smaller ones, limiting the number of required scenarios to only a few. It is pointed out that this might not be too costly because of the wide availability of commercial systems which could be modified to fit the needs of less sophisticated blocks of business.

In summary, here are the important points I have been trying to make. Consider and discuss all the risks. Think abut sensitivity testing of noninterest assumptions if you don't already do it. Test separate accounts and think about annuitization. Think about whether it's appropriate to say that any one scenario is more or less likely than another. In a similar vein, do not let anyone use the results of cash-flow testing to compare one year to the next and reach what I suggest are probably erroneous conclusions about a company's financial progress. And, of course, be professional. If additional reserves are needed, set them up; do not spend time trying to get out of it. Use your energy to convince your management why the reserves are needed.

And here's my most important reminder. Our profession is being trusted to do it right. If any one of you messes up, regulators will lose faith in the work of the entire profession. Please do not let the work of the appointed actuary become a routine task now that it has been in existence for a few years.

If once or twice a year you remind yourself of the objectives and the alternatives to it, you and the regulators will be well served.

MR. FRANK P. DINO: I am going to deviate a little bit from the first two speakers in that I am not the valuation actuary for the state of Florida. My responsibilities are associated with the approval of rates and forms. With the form filing process we do review the actuarial memorandum to look at how reserves are established. Our valuation actuary is Kerry Kranz, and whenever an issue comes up, we usually get together to decide on how to handle it. I am going to jump into the core of what I would really like to discuss, and I hope I have enough time to get your feedback and comments as I really need your help and assistance in a couple of areas.

I was with the State of Colorado for over 14 years, and I was associated with the National Association of Insurance Commissioners (NAIC) for over ten, so I became familiar with the model laws. Similar to the all states requirement that Shirley Shao is working on, I made a bold assumption when I went to Florida: I assumed that things were standard. I found out that I was wrong.

For a couple of nights after I started in Florida, I took the statutes home and read through them in detail and found out there were significant deviations. The first one, the one that you probably heard about most significantly, deals with premium deficiency reserves on term products.

I received a form filing on a renewable term product. It had the traditional initial term period first and then the guaranteed higher premium rates. The actuarial memorandum associated with it provided for the traditional unitary approach in which case no reserves developed; they were extinguished with the future rate increases. I had to deny that form. Florida has an odd provision that is not provided in the NAIC model. Under the deficiency reserve section, there's an additional sentence. I'll quote it for you: "As regards renewable term life insurance, the policy reserve and foregoing deficiency reserve shall be calculated using the current term period only." For renewable term life insurance, this immediately prohibits the use of unitary reserves.

What does this sentence mean? It could have far-reaching conclusions. I could easily interpret it for all of the current term products and indeterminate premium products. I have had significant discussions with some industry representatives affected by this from other regulators and spoke at length with Donna and some other people at the Academy, and decided that it may not be prudent to interpret it very liberally, or rather to try and construe it narrowly.

I believe that clearly it could be interpreted on the term-to-95 products, where the current term period is the level premium guarantee, in which case significant amount of deficiency reserve and surplus would be extracted from the industry immediately.

How are we currently interpreting this? Is it only being applied to renewable term products, not to indeterminate premium life products? So current term to 95 basically has a single term period through age 95. I am not interpreting that as a renewable term.

I am not interpreting the word *renewable* to mean the premium provision, but rather the term of coverage of the contract. I spoke with Steve Smith who has significant knowledge on these types of products and asked him to provide me copies of standard policy forms that were issued back in 1979 and the early 1980s when this statute was passed. My research of the statute came into play in 1979. Traditional renewable term products that were in place then were not the indeterminate premium term to 95 products of today. They were traditional ten-year term products with an initial guarantee of premiums, and then within the contract you could renew this whole policy for another ten-year term. Those are the only types of contracts that we are applying this provision to. Granted this may be more form over substance, but it is the only way I could see that we have to give merit to the statute and not completely disrupt the market.

This does create a significant concern: how are we going to move ahead with Regulation XXX? We have had internal discussions, and we do agree that that is the best approach. But with this provision embedded in statute, and again, I emphasize this is in statute not in rule, I see it's impossible to keep it there and overlay XXX on top of that.

We are going to have to go in and delete this provision in the statute in order to adopt the model regulation in order to be consistent. Otherwise we would have a problem of a similar standard applying to all similar policies. The other thing is, by applying this standard directly, you are not getting the additional mortality benefit of the tables that are contained in XXX. Calculating deficiency reserves under the current term period only, you are required to use the 1980 CSO and ten-year select factors. You cannot use the 15-year select factors or the 120, 150% improvements.

So I hope I narrowed the impact as much as possible, but because of this statute, it cannot be ignored.

Before we can adopt XXX, we are going to need to go in for legislation. Another problem that was discovered is that the standard valuation law does contain a sentence that provides the ability of the commissioner to adopt, by regulation, additional mortality tables adopted by the NAIC. I do not know why, but Florida has not adopted that sentence from the standard valuation law. This means that we simply cannot adopt XXX even if we wanted to at this point because it contains mortality tables, and the commissioner does not have the ability to adopt mortality standards by rules, so we have to go in for a legislative change.

An additional problem that surfaces with that may be something that is looked over on the surface. If the statute does not contain specific authority to adopt additional mortality standards by rule, then the only standard in Florida right now is the 1980 CSO. Florida has not adopted any other mortality tables in any way. The big question, and this is another one that I will ask your help on, is that we have not adopted the smoker and nonsmoker tables. What does this mean? It means lots of problems for you and me. We are accepting the smoker and nonsmoker tables informally right now. Very technical reading, technical compliance would say that, if you are using a table that's different than the law permits, that would fall into the aggregate test: do the testing against the aggregate standard and see if the reserves in total are sufficient.

I see these are really unacceptable solutions. That is the technical reading of it, but in both of these areas, we are going to need to do something more direct. I have taken initial efforts to see what can

be done to adopt these standards. It is still in progress. I do not know what is going to happen. In the worst case, I will be proposing legislation to resolve the issue.

But as far as both the deficiency reserve and the mortality table standards, we have to do something to address this. I have been uncomfortable, once I discovered this issue, to simply be silent and close my eyes to it and let it continue as an accepted practice. It is the right answer to use the tables. It is the industry norm. It would completely disrupt the marketplace for me to do anything adverse against it, and we do not intend to.

I'll just advise you: technically these standards are now in the laws on the books of Florida. Another example is the unisex tables that were adopted for the Norris qualifying cases by the NAIC. Those were not formally adopted. Because of the Supreme Court ruling we will accept the unisex table for Norris qualifying cases. And anyone who has filed a form I am sure will remember that I do ask a standard disclosure on every filing that the form is for Norris qualifying cases only. We do not allow unisex tables to be used for general sales.

Just recently we did have another provision of statute that was discovered that was different than the NAIC model. This was one that has the modified first-year premium commonly referred to as deposit term. Our statute is different in that area. We have not completely analyzed it or investigated the implications of this change yet. So I do not want to mention anything more than just that. We are aware of it and are looking into it.

We do require the compliance with Actuarial Guideline XXXIII (GGG) on CARVM for annuity reserve valuation purposes. I was very surprised to see the continued efforts going on: being involved for over two years I thought all these issues had come out already. But Florida does look for an indication of compliance with Guideline XXXIII.

There's a particular issue on annuities that has come up in determining the valuation rate for flexible premium annuities besides going through the guaranteed duration and plan type and so on. One of

the conditions is whether or not there are interest guarantees on consideration received more than one year after issue. If there are no guarantees, the weighting factor is increased by a 5% valuation rate that's a quarter of a percent higher. We are interpreting that provision to be any guarantee. So flexible premium annuities that have a 3% minimum guarantee for future considerations do fall under that and are not entitled to the additional quarter of the valuation rate.

The more significant and far-reaching problem on these is not just discovering them now and how we resolve them for tomorrow for new forms, or how you may modify your new form to meet these standards, but the effect on existing in force. Once the valuation actuary is made aware of the statute, I believe he or she has the responsibility to comply with it. So as far as the deficiency reserve statute for term policies, I believe that you do have a professional responsibility to look at your existing in-force business and hold reserves compliant with the Florida law.

To simply say you were unaware, or you have always done it this way, I believe would be professionally irresponsible. That is the larger problem: you have done things in the past, and now we all discover that a problem has surfaced.

I hope I could find some ways to resolve these. I will be looking at all of these issues in order to address them either through regulation or legislation in order to bring Florida into uniformity with standard practice. But for now, these are some significant differences that I have uncovered.

MS. MARSHA WALLACE: I was a little concerned about what you were saying about limiting the testing period on the blocks to 20 years for different blocks of business. First off we have big blocks that are three to five years and then run off, and then we have blocks as long as 100 years worth of cash flows; we run as long as 50 years. First, I think that it would probably improve our results if we shortened some of those periods. The second thing is I do think it's appropriate to still aggregate them, because it is present valued, and they are all converted to present value. I do not think you can standardize them because of the different lengths of maturity of the blocks.

So I would like you to carry that back to the department, because I think it is appropriate to look at different periods for different blocks because of the maturity of those blocks.

MR. PHILLIPS: I think Daphne indicated that you should use your actuarial judgment on the period that you are using if you have valid reasons. I did not think she was saying that we are dictating the periods. She was just offering observations on mismatch or inappropriate aggregation, that is, too long a period. But I do not think she was mandating any rules. If you have a reason to use the period you are using, do that.

MS. CLAIRE: Frank, I have a specific question for you. You said you are working on maybe changing this, however the people at this session have to sign opinions as of the end of 1996. Now that all of them are aware of the term requirements in Florida, exactly what are they responsible for?

MR. DINO: For the term products that are renewable term products that have an initial term period, i.e., if you look at the policy specifications page, and it says this is a renewable term product issued for an initial term period of ten years, then there are renewal provisions in the contract. They'll say at the end of ten years this policy will terminate, however, you may renew it for an additional ten-year period, (these are the traditional type of renewable term products). Those are the only ones that I believe that you should take a look at. If you do have some of these in force, then you should establish the reserves in the current term period only of those level of guarantees. So you will be looking only at a five- or ten- or 15-year period with the traditional 1980 CSO ten-year select factors, and not looking at future renewals or escalation in the guaranteed rates, so there will be a reserve strain on those products. But it's not necessary to reevaluate all types of term products or indeterminate premium products. We are not applying that broadly.

MS. CLAIRE: Hal, I know it's a little bit early, but do you want to give an idea of what California may be dong for term reserves for the end of 1996? You currently have the Bulletin 74-11 in force for this year-end.

MR. PHILLIPS: Sheldon Summers issued a letter in January of 1996. And I guess I would say we want to rely on the valuation actuary and the gross premium testing. Interestingly, Bulletin 74-11, issued in 1974, talks about gross premium valuation. Is that not amazing? But you know whatever reserve you set up should be appropriate, taking into account lapse assumptions and higher mortality on those that hang around and so on. So I would say, do what you did last year, and we do not want you to go through unbelievable gyrations, because you just became aware of 74-11 at this meeting or something like that. We have proposed a new bulletin which would accept XXX for issues of January 1, 1997 and later and would provide an option for other methods as long as the results were tested for adequacy through gross premium valuation or some other asset adequacy analysis.

MR. DINO: I just wanted to remind you in looking at all this, remember that the opinion being filed is in the aggregate. So just consider these sufficiencies and additional reserves you have elsewhere before you go into too high of a hover. There may not be a need to do too much other than some general testing.