2002 Valuation Actuary Symposium
September 19–20, 2002
Lake Buena Vista, Florida

Session 18PD
Statutory Valuation of Life Insurance Policies

Moderator: Stacy L. Laifook
Speaker: Lloyd M. Spencer, Jr.
Stacy L. Laifook
Christine Dugan

Summary: The panelists discuss issues and the impact of current statutory valuation requirements for life insurance policies. Requirements covered include the Actuarial Standard of Practice on XXX, Actuarial Guideline AXXX, and Actuarial Guidelines 36 and 37. Products and issues discussed include nonlevel premium or nonlevel benefit insurance (e.g., selective term), universal life with secondary guarantees or shadow accounts, determination of X factors, interpretation issues regarding XXX, variable life, and variable universal life, equity-indexed universal life, and the new CSO mortality table.

MS. STACY L. LAIFOOK: I think we have a good panel. Lloyd Spencer from ING Re is here. He's going to talk to us today about XXX issues and update us on that. I will be speaking to you about 2001 CSO, which you probably are getting sick of hearing about, but it is an important topic. Then, Christine Dugan from Deloitte & Touche will be talking to us about Actuarial Guidelines (AG) 38, 37 and 36. We are going to cover all of these topics, but I also draw your attention to the fact that there are follow-up workshops tomorrow on these topics, so they'll cover them in more detail and more interactively. Our main goal is to give you an idea of what's out there and a general background on this topic. With that, I'll turn it over to Lloyd.

MR. LLOYD M. SPENCER, JR.: This is, as Stacy said, the obligatory session on XXX. My agenda includes some obligatory comments on XXX, but I want to take us in a slightly different direction today. Knowing that I'm speaking to valuation actuaries, I want to branch off in a slightly different area of XXX, but certainly we have to hit the high points of X factors themselves. I will also be touching on some issues particularly related to the Valuation Basic Table (VBT), but also the 2001 CSO Mortality Table. During the question and answer time, if there are particular XXX term-related questions that you might have or universal life (UL) questions, send them up this way, but I want to try to broaden your horizons a bit as we think about XXX.

We'll start off with the process of determining X factors and justifying those X factors. I'd like to reverse that thought process here today and start with the justification process, a retrospective analysis of X factors. Certainly, the role of the appointed actuary here is very clear. I think the regulation, the Standard of Practice and the Life Practice Note have all become engrained in the practice of the industry as we address XXX. There's a statistical analysis that would be required each year to be performed by the appointed actuary or his or her designee to evaluate the pattern of emerging mortality experience and make a determination as to whether a schedule of X factors continues to be appropriate. This is in addition to filing an actuarial opinion and developing the supporting actuarial report in conjunction with that analysis that is sufficient to meet the requests of any state regulatory departments.

Working hand-in-hand in that process, I want to talk a little bit about the role of the product development actuary as well. At ING Re my role is primarily related to setting pricing mortality assumptions and the process and methodology that ING reuses falls into my domain. I have gone over to the dark side of product development from working as a financial actuary. For a number of years I worked for the appointed actuaries of Lincoln Life and Lincoln Re, so I always viewed myself as a financial actuary; however, I've enjoyed my time on the dark side. It's actually not all bad. I want to bring you some perspectives from the product development side of the house as well.

Think about your product development actuary in conjunction with this justification process. Who better to help you assess the products that your company sells than the product development actuary who, presumably, either put the products together or has the product development file at his or her fingertips? We all know that product development actuaries document 100% of the work that they do and the assumptions that they used are perfectly crystal clear.

Think also of the product development actuary as a "solver." I use the word "solver" to describe an iterative process designed to meet a varied number of demands that are placed on the product development actuary. There's the sales force demanding a competitive product, the valuation side demanding that a product use a prudent mortality assumption, and product development actuaries being advocates for the consumer, making sure that the company offers the most competitive price out in the marketplace to achieve sales goals that no doubt influence their compensation.

The product development actuary often serves as an outsourcing broker. If you as an appointed actuary, simply have too many items on your plate, a justification of X factors is certainly, one item that can be outsourced, whether to a consulting actuarial shop or to one of your company's reinsurers. This is a process that can be broken apart from your normal activities to potentially free up some of your time during the year-end crunch, when we all know that there's never enough time. It seems like the number of days that fall between the end of the year and March 1 is never enough to get the work done.

Of course, a product development actuary also serves as a cheerleader, encouraging you, motivating you, and cheering you on to justify the schedule of X factors that they potentially put together for use, not knowing how the experience would necessarily play out over time. That cheerleading aspect can often be the time when you most often see the product development actuary standing outside your office saying go, go, go.

Let's move onto the determination of X factors and setting that schedule up front. Again, that retrospective process is fairly well defined. Companies have been through that the past few year-ends and, it is hoped that we feel like we've come through that as a better group of actuarial professionals.

Thinking about, again, the role of the product development actuary, you might notice that this is remarkably similar to the roles that the product development actuary played during the justification process. They are often the persons who are developing the schedule of X factors, balancing the various requirements, and potentially looking to a reinsurer or a consulting actuary to help them set the initial schedule of X factors, as well as serving as a general cheerleader hoping that they get the work done that they need to.

The work of the appointed actuary here is guided, certainly, by regulation XXX, but also by the Actuarial Standard of Practice Number 40, which has basically three main points. One addresses the creation of X factor classes. The second is selection of X factors, based on the anticipated mortality that you would expect to see on your block of business. At this point you might be asking yourself, "Why is he standing up here talking about mortality assumptions? That's something that falls into the purview of the product development actuary to set." I can think of several primary reasons why we're all concerned about the mortality experience that our companies achieve. From a reinsurance standpoint, I'm very concerned about the mortality experience that your company achieves, but one of those items, certainly, would be how claims impacts your financial results. Even if you're ceding 90% of your business to a pool of reinsurers or to one or more reinsurers, claims on the portion retained do fall through to your bottom line.

Second, mortality experience is going to affect the price that your company can charge for its products. Sales goals, and pressures to make sure that you have adequate production of business to cover your expense margins both drive your company to achieve a certain level of sales.

Third, the action of the senior management of your organization can be driven by mortality perceptions or expectations. Lacking complete knowledge, the perception will potentially affect the decisions your senior management makes. Senior management is always concerned about volatility in mortality as well as the general use of reinsurance, asking if you are paying too much for reinsurance. If there's a disconnect in the mortality assumptions between the direct market and the reinsurance market, who's right? If the reinsurer is right, are we paying too much for our reinsurance?

Ultimately, the appointed actuary should be thinking about mortality, because you put your name on it. The anticipated mortality, which goes into the X factor schedule, is what the appointed actuary signs off on at the end of each calendar year. You should be thinking about mortality and grooming yourself to become a mortality expert over time, so that you can have some push back on the product development actuaries that may be handing your mortality experience, studies, and assumptions.

Certainly the prospective analysis application of the six tests that are laid out by regulation XXX is another one of the roles that the appointed actuary fills in the process. Again, that is a fairly straightforward analysis. It can result in some significant margins being added to your anticipated mortality, but again, it's a margin that you can quantify. The primary concern here is understanding the anticipated mortality that you've been handed.

Consider first the creation of X factor classes. I've extracted one sentence here out of Actuarial Standards Board 40, not intending to summarize the Actuarial Standards of Practice in any way, shape or form. The sentence I've extracted, "The policy that comprises a X factor class, generally, should have similar underwriting or experience characteristics," should lead us to think about that in two component pieces.

Table 1 shows a typical set of underwriting requirements by issue age and amount. Having worked on one of the SOA exam committees, I have the obligatory reference to "ABC Life," because we all know from the reinsurance and direct life questions that you have seen on the

exams that ABC Life is always the direct company and XYZ Re is always the reinsurance company. You've just got to adhere to industry norms sometimes.

TABLE 1
Underwriting Requirements: Issue Age and Amount

Age Nearest Birthday	$0 to $99,999	$100,000 to $499,000	$500,000 to $999,000	$1,000,000 to $2,999,999	$3,000,000 & Up
0 to 15	Submit as Non-Medical application through $250,000 For higher amounts consult an underwriter				
17 to 40	Non-Med HOS Blood	Para-Med HOS Blood	Para-Med HOS Blood	Para-Med HOS Blood ECG	Medical HOS Blood Treadmill
41 to 50	Para-Med HOS Blood	Para-Med HOS Blood	Para-Med HOS Blood	Para-Med HOS Blood ECG	Medical HOS Blood Treadmill
51 to 60	Para-Med HOS Blood	Para-Med HOS Blood	Para-Med HOS Blood ECG	Para-Med HOS Blood ECG	Medical HOS Blood Treadmill
61 to 65	Para-Med HOS Blood	Para-Med HOS Blood	Para-Med HOS Blood ECG	Para-Med HOS Blood ECG	Medical HOS Blood Treadmill
66 to 75	Para-Med HOS Blood	Para-Med HOS Blood ECG	Para-Med HOS Blood ECG	Medical HOS Blood ECG	Medical HOS Blood Treadmill
76+	Para-Med HOS Blood	Para-Med HOS Blood ECG	Medical HOS Blood ECG CXR	Medical HOS Blood ECG CXR	Medical HOS Blood ECG CXR

You can see that not every issue amount is necessarily created equal, nor is the underwriting that's applied to every issue age equal. This is something I think that we all assume just happens behind the scenes. I guess one question to you would be, are you aware of your company's underwriting requirements for particular products at issue ages and issue amounts? Do you understand the mortality that ultimately goes into your schedule of X factors? You can think about the mortality for an issue-age 45-year-old as being composed of both paramedical and medical underwriting, with a varying degree of underwriting rigor applied to each individual applicant. Certainly you would expect that folks on the left side of the table will have higher

mortality than those on the right side of the table for the same issue age. If the underwriting process is working correctly, underwriting is first assigning individuals into standard or substandard classes. To accomplish this goal, underwriting needs a differing number of tools. Cost effectiveness can come into play as well, as you move to the right of the table. If someone's applying for $3 million of coverage, you can justify a little more rigor in your underwriting process, not only because of expense coverage, but also because you have a significantly higher risk on the line.

To complicate things along the way, your company could be banding products, and your mortality for a particular band could be composed of nonmedical, paramedical, and medical business blended together in some way, shape, or form. Again, as an appointed actuary and as you receive that schedule of X factors that may have been developed by your product development staff, are you aware of all the variation that exists within that schedule? Are you aware of the impact of each one of these items in the underwriting process used by your company?

Again, continue with this concept of having similar underwriting guidelines. Who at your company can you consult to gain some understanding of what kind of experience is going into the schedule of X factors that your company is using? Your product development actuary should be intimately familiar with the assumptions that went into development of an X factor schedule and should understand what kinds of business your company writes. If you're in the competitive brokerage term marketplace, you could have significantly higher average issue sizes than a company that is marginally in the term market. Understanding where that business comes from is the role of the product development actuary, and he or she can certainly be your ally on that front.

Think about consulting with your chief underwriter. It is my belief that the chief underwriter at your company would be tickled to have you walk through their door and ask them about underwriting requirements. We stereotype underwriters as cranking through cases, keeping their head down, doing a lot of good work. To see an actuary walk in and want to hear what they have to say is a good thing, so I think you'll be favorably received on that front. Likewise with your

company's medical director. Medical directors tend to be consulted on large-line cases only. They would be happy to talk to you about expected mortality differences, particularly at larger face amounts, so you can gain a better understanding of what's going on there. Of course, your reinsurer would be happy to talk to you as well.

For a number of companies I know, the reinsurance buying decision may be centralized in one person's hands. It could be in the product development area. It could be in an area independent of both the financial reporting and the product development areas, but don't feel as though that precludes you from accessing any of your reinsurers. You should feel like you have the complete discretion to contact your reinsurers to gain a deeper understanding, from their perspective, as to what's going on with your company's mortality experience. I would put consulting actuaries in that same category.

Thinking about experience, we've heard quite a bit about the 2001 CSO today. I wanted to talk about how experience can vary by the level of underwriting, again, along the lines of the grid in Table 1. What we primarily saw for ABC Life was a mix of nonmedical, paramedical, and medical underwriting. The paramedical underwriting would be differentiated from nonmedical and the fact that the applicant would be required to visit with somebody to, typically, have a needle stick, give a blood draw as well as provide a set of observed physical measurements. Again, this is aimed primarily at underwriting out the cardiovascular risks from the key age corridor of ages 50 to 70.

To the extent that your company is selling 10-year term products to 25-year-olds, the value of cardiovascular underwriting requirements will be relatively limited. Yet, you have to question why somebody would be buying a nonmedical policy when, typically, just paramedical requirements at younger ages are not that invasive along the way. What we see represented at issue ages 17 to 40, is that there could be some significant differences in mortality expectations both in the absolute level and by duration when you look at different underwriting requirements. Are you aware of the variability that falls into your X factor schedule? You tend to see things rolled up at a composite level. Do you understand the component pieces that went into its construction? This is an excellent question for your product development staff.

Again, let's think about what can drive your mortality experience as the business plays out over time. As we've already touched on here, the level of underwriting that is performed will have an impact on expected mortality. So will the market that your company sells to. There's a distinction among insured lives, mortality, and population mortality. I think we're all very familiar with the notion that individuals who make a purchasing decision related to insurance have a more favorable mortality outlook, in part because they're concerned about the future. Life insurance is a decision that, at the younger ages, is primarily driven by providing for the needs of those who are left behind if you were to die prematurely. At the older ages, it's driven often by tax decisions. The market that your company is pursuing will have a dramatic impact on the mortality experience that you would expect to see.

Questions may come up in regard to work-site marketed products or limited underwriting products. You have to be cognizant of the degree of antiselection that's present in any one of the markets that your company may be going after. Again, if your X factor schedule is all rolled up, you might not be able to see that variability in the underlying assumptions. Ask your product development actuary to highlight what the differences are. Show me the numbers. Help me to understand what's going on.

Results can vary by distribution channel. It does matter how the business comes in the door. If it's from a competitive brokerage setting, you can expect a different mortality result than you might see from a dedicated agency staff that's employing field underwriting to screen out applicants that the company just would not be able to offer a competitive rate on.

The underwriting expertise that's housed within your company is a key driver of what goes on here. You can follow all of the published requirements and underwriting guidelines in the world, but if you don't have a qualified underwriting staff with significant experience to implement those underwriting decisions, then you could be surprised at how the marketplace will select against you. Certainly, the brokerage, and even the agency force, will take note of exceptions that are made throughout the underwriting process. If they have an applicant that comes up again in a similar, potentially impaired situation, they know which company to take that business to.

Think about the number and size of preferred classes your company sees. As the market has become more segmented, particularly on the term side, into multiple preferred classes, companies that are offering products with no preferred classes or a few preferred classes will be taking a disproportionately worse slice of the market than companies that are offering multiple preferred classes. That's because the very best risks will want to select themselves into underwriting classes with the lowest possible premium. You'll be left in a situation where you're offering one preferred class with a disproportionate share of poor risks that couldn't qualify for some other company's elite preferred, or ultra preferred, or any of the other preferred definitions that come along the way. Again, the preferred criteria that a company employs will have a direct impact on the mortality results. Is your company asking the right kinds of family history and personal history questions to screen out applicants with an unfavorable disposition toward mortality?

Certainly, in the competitiveness of your product, mortality and price are clearly related in the marketplace. You can have excellent preferred criteria and be selecting the right kinds of risks in the process, but if your price is not competitive with other companies in the market, then those more favorable risks will take the better price offered by another company.

Clearly, the market is more efficient than it used to be. You can think about the life insurance sale from 20 years ago. Call up an agent; maybe call up a broker. I need life insurance or, more typically, it was sold to you in that process through some kind of a referral. Today, you can go out on the Internet, enter in your personal information, and get a number of quotes back almost instantaneously, so the market has become significantly more efficient here. Certainly there's antiselective behavior among any of the policyholders that walk in the door.

Think about the selection of X factors themselves and the Standard of Practice. The appointed actuary should select X factors and each X factor class should be based on anticipated mortality for each class without recognition of mortality improvement beyond the valuation date. You're going to want to think about that first concept again. Actually, it's the second concept first.

Anticipated mortality for each class is derived, if available, from relevant experience that your own company has. In some cases, you may not have credible mortality experience available for the particular product that you're looking at. There are a number of factors that would influence the relevance of mortality experience at your company as well. If the product that you're looking at today has a different target market or distribution channel than the one it had in the past, it will have an impact on mortality. Again, concerning the relative competitiveness of the product and just the practices of your company in terms of underwriting, I would say the general trend in underwriting over the past several years has been to liberalize underwriting requirements in favor of speed to market or speed through the underwriting process and get applicants in and out the door as quickly as possible. That's all going to put pressure on your mortality assumptions on the upside rather than on the downside of that process.

One other concept I want to pick up here as well is that the appointed actuary should select the X factors. Again, it has been in the regulation all along the way. I think that responsibility was put there for a particular reason, because, in part, the regulatory community likes the notion of the appointed actuary having a check-and-balance role with the product development actuary to make sure that things don't get too far out of whack in the assumption-setting process.

For many years, the work of the product development actuary was done over on that side of the aisle, and what I got back as an appointed actuary was the final result. Is this a particular point where your company should think about outsourcing the development of X factors? If you have limited relevant experience at your own company, then the next step would be to look to experts in the field to try to gain a greater understanding. Again, your product development actuary should be able to do this for you. They may be able to get you comfortable that the adjustments that have been made to the mortality are appropriate and the assumption that was developed is relevant for the market that the product is being sold in.

Both consulting actuaries and reinsurers will be happy to talk to your company about the development of X factors on an outsourced basis. Again, that reflects not only drawing on their pool of experience in terms of mortality assumptions, but also thinking about outsourcing those functions to individuals who have given more time and consideration to the topic. From a

reinsurance standpoint, on the order of 80–90 cents of every reinsurance premium dollar that comes in the door goes to fund mortality on our side of the house. So we are very, very cognizant of where the trends in mortality are going, and we want to reflect those trends. However, we want to be prudent to make sure that we report a profit at the end of the year, just as your company would like to as well.

As I touched on originally, there are the traditional six tests of regulation XXX that we've all seen along the way. They are listed below.

- May vary by any policy factor expected to affect mortality experience
- Not less than 20%
- Nondecreasing
- $PVFDB_{x\ Factor} >= PVFDB_{Anticipated\ Mortality}$
- X Factor Mortality >= Anticipated Mortality in each of the first five years from valuation
- Take into account adverse effects of any increase in gross premium

Let's move onto the second point of my agenda, the 2001 Valuation Basic Table (VBT). Consider this the latest, most up-to-date view of industry to mortality. The speakers in Session 10 touched on some of the development of the 2001 VBT that I'll cover again. Again, that experience was culled from the 1990-95 SOA Experience Table. That would be exposures over these years 1990 to 1995 on business that was issued during or prior to that time period. It does represent the contribution from approximately 21 companies, but in a number of different issue and exposure period years.

There was a need to supplement data that was submitted at the older ages and for nonsmoker/ smoker relationships. There are only about 10 years of credible nonsmoker mortality available in the data reflective of when nonsmoker/smoker products hit the markets in the late 1970s and early 1980s as you move through that experience period. There were not that many durations of experience available on a credible basis, so there was some additional work to supplement both at the older ages as well as for this nonsmoker/smoker split.

We've already heard the emphasis on smoothness over fit. You can think about that experience being contributed. The super-preferred era, you might say, kicked off in the mid-1990s, when multiple preferred classes really caught steam in terms of sales. So the issues that went into the 1990-95 table were primarily from the early stages of that preferred area, or simply nonsmoker/ smoker products, or even products that didn't differentiate between smoking status. A wide variety of experience made it into the table.

The overall level of mortality has decreased relative to the 1975-80 table. Your product development actuaries primarily have been using the 1975-80 table as adjusted for improvement as their basis for setting mortality assumptions. So, the overall level of mortality has decreased as we would all expect that it would. Durations 1 and 15 give you a sense of how that varies through time. There are some slope issues along the way as well. Issue ages 25, 45, and 65 for male nonsmokers show how that mortality is playing out over time. There were 15 durations at the end of the select period in the 1975-80 table. The select period has been extended in the VBT for 25 years. Selectness can even continue beyond 25 years, but I think the developers of the VBT wanted to keep that at a prudent level representative of where things are at for the industry in aggregate.

A natural question that would come up would be, if the 2001 VBT represents a best-estimate pricing basis for the industry, why can't I just use that to develop my anticipated mortality to go into the X factor process? If you look in the 1990-95 summary that's available out on the SOA Website, you can get a list of the companies that contributed experience to that study. There are differences in mortality experience by company. Are the companies that contributed different from yours in a material way? That's a very basic question to ask yourself.

The products offered in this preferred era are not uniform along the way. That has a significant impact on what experience plays out in the VBT. The experience in the VBT also reflects some significant replacement activity throughout the preferred era. As the price of insurance continued to drop, better risks went back into the market, repurchased their coverage, extending the length of the coverage but also gaining a lower premium along the way. That replacement activity is

reflected to some extent in the 2001 VBT. Those policies that remain throughout the exposure period presumably have an elevated mortality assumption due to the lapse that we've seen on the products.

This table, again, is intended to be an industry table. It is not a preferred products table. It is not reflective of the wide range and differences between nonmedical, paramedical and medical. It's all been collapsed together in that process. To the extent that your company is issuing significant amounts of nonmedical business, that means that you're going to have to adjust the 2001 VBT. To the extent your company is offering high-end marketplace highly underwritten products on a medical basis, there's some significant reduction that you'd have relative to the 2001 VBT in setting your assumptions.

Let's just touch quickly here at the end on the 2001 CSO Mortality Table that was just adopted and derived from the 2001 VBT. The concept of X factors survived here. When you think of X factors as just representing the relationship between anticipated mortality and the underlying valuation table that's being used, your X factor itself will change as you move from the 1980 CSO to the 2001 CSO Table. However, the concept of X factors remain the same, and your anticipated mortality, aside from differences in the marketplace, should be the same as what you were using before. The X factor will change and presumably go up to reflect the decrease in mortality in the 2001 VBT, but the X factor itself is still valid and available for use in the calculation of minimum reserves.

There's still limited relief provided in the basic table for super preferred products that segment the marketplace into three or four (or more) nontobacco preferred classes. The mortality assumption for the best nontobacco class is going to be significantly lower than it is for the residual nontobacco class that's left on the other end of the spectrum. The 2001 CSO table does not reflect in any way the ability to use a different assumption for basic reserves for super-preferred products versus residual products.

I've heard it said from the Regulatory Community that regulation XXX was a step forward in giving the appointed actuary discretion over setting the mortality assumption for minimum reserve calculations, and they wanted to see how the industry handled it. I guess I would encourage you, as appointed actuaries, to take that responsibility very seriously because, from a product development side, we would love to see you have the discretion to use your own mortality assumptions for basic reserves as well, and then be able to justify those through a Section 8 Actuarial Opinion, using asset adequacy testing, and gross premium valuation techniques.

Again, I don't know if it was necessarily mentioned today, but it's my understanding that the IRS intends for us to use ultimate mortality for tax purposes, because, as an industry, that produced the overall lowest level of tax reserves.

MS. LAIFOOK: As I said before, I will cover 2001 CSO, again, so I apologize for any overlap in the other sessions. There are a fair amount of new topics covered in Session 10PD. Things I'm going to go through are background about the Table and the proposed model regulation that is no longer proposed, as it was accepted by the Life and Health Actuarial Task Force (LHATF) at the September meeting. I will also talk about how it compares to the 1980 CSO Table, and then discuss the valuation tax and product implications.

As a way of background, it has been 20 years since we've had an updated Commissioners Standard Ordinary Table. There has definitely been mortality improvement in those past 20 years, so there is pressure for the SOA and the American Academy of Actuaries to look at updating the Commissioners Standard Ordinary Table.

Concerning the process for developing this, the SOA developed the initial Valuation Table as the VBT that Lloyd had talked about, and then the Academy introduced loading. It's about a 15% load, overall. The Academy also studied the issues of moving to a new Table, and there's definitely some things that need to be considered. There was an NAIC draft in model regulation. My slides are based on the July 26, 2002, draft, which was outdated by an August 16 draft. Then, as I said, it was accepted by LHATF in September.

This will be the first time that states adopt a Commissioners Standard Ordinary Table by regulation, not statute. There is one exception. Florida will need to do it by statute. The 1980 amendments to the standard valuation law and nonforfeiture law state that new mortality tables developed in the future can become effective in a state without being specifically named in the text of the laws. First, the NAIC must adopt any such new tables. Then, those new tables must be approved through a regulation promulgated by the commissioner of insurance for the state. Basically, what that means is that it doesn't have to pass the legislature. So this should compress the time frame for having the 2001 CSO Table approved, since it doesn't have to go through the state legislator, except in Florida, as I mentioned.

The effective date for the tables is January 1st following the state's adoption. Given that it was adopted by LHATF in September, it will go before the Life Insurance and Annuities Committee (A Committee) of the NAIC in December, and then it's expected that the states will start adopting in 2003, with the earliest likely permitted date of January 1, 2004. The mandatory date in the model regulation is stated as January 1, 2009. So any new product issued after January 1, 2009, in states that have adopted the CSO 2001 Model Regulation, will need to file under that mortality table.

There are other points about the Model Regulation. You can elect to adopt, on a plan-by-plan basis, prior to the mandatory date. You don't have to do it for all new issues. We will talk about some of the product implications, but these are really issues that concern the product areas. Is it a benefit to move to the new table? Is it a benefit comparing to the tax implications versus the statutory reserving implications? There are a lot of issues involved, and we'll talk a little bit about those. You do need to use the same table for both valuation and nonforfeiture values.

The Model Regulation removed the requirement for companies to submit their mortality date experience electronically. There are two reasons why that was originally put in there. The first is that the SOA had a fair amount of trouble in terms of getting people to participate in the Mortality Study. This table is based on data from only 21 companies, and this suggested requirement was looked at as a way as to get mandatory participation in mortality studies. Based on further discussion, it was decided that a regulation was not a place to require participation in

the Mortality Study. The other reason is to give the commissioner or the Insurance Department comfort that the 2001 CSO-based reserves are adequate for the company. We'll talk about some areas where the 2001 CSO will not be adequate. By submitting the actual experience of the company, the regulators could see whether or not the reserves would be appropriate.

Another issue is the basis for determining whether deficiency reserves are required. This was something that was fairly contentious and, actually, got changed to what the industry was pushing for, in the final regulation. In initial stage of the regulations, it stated that you needed to use the same structure of table for determining both basic and deficiency reserves, which differs from how XXX allows you to do it. In XXX, you can use an Ultimate Table to do basic reserves, and the Ultimate Table produces slightly lower reserves. Then you can use your Select and Ultimate Table with X factors for your deficiency reserves. Basically, you minimize your overall reserve impact. This requirement of using the same structure of table for basic and deficiency reserves was removed right before it was passed by LHATF, so you can use two different structured tables for basic and deficiency reserves.

Other issues include the fact that substandard guarantees and simplified issue were not included in the experience base, so this table may not be appropriate for those issues. Also, extended-term insurance (ETI) was not included in the experience base. One company of the 21 did submit ETI data, and the Academy looked at it and saw that it wasn't drastically different from what they saw on the ordinary life. I think more importantly, though, ETI is not prevalent in today's market in terms of new issues. Whole life is definitely not one of the key new issues, and so they were not as concerned about ETI as a nonforfeiture option.

Finally, there's a requirement that anyone submitting reserves under a 2001 CSO basis needs to submit a Section 8 Asset Adequacy Analysis Opinion. This tries to address the last three or four issues I've noted. So, in the cases of substandard, guaranteed and simplified issue, where the reserves may not be appropriate, you do need to look at asset adequacy analysis.

There are a couple of other places in terms of where the reserves may not be appropriate. Twenty-one of the 21 companies submitted data. The Academy then put a load in the VBT, developed by the SBA, using this company data. They used a more complicated formula than I'm going to get into. Basically, there is about a 15% load. Even with that load, in developing the reserves for those companies under 2001 CSO, the reserves would only be adequate for 70% or 15 of the companies. That's 30% of the companies just in that experience base for which the reserves wouldn't be adequate. The point being that asset adequacy analysis should catch that, and the appointed actuary should put up extra reserves.

Obviously, companies may have more variability than that seen for the experience base. So the Academy did a Monte Carlo simulation looking at smaller company experience. Using a reasonable retention limit, it found that the 2001 CSO reserves were adequate 80% of the time. So this is just all moving, as XXX did, toward more importance being put on the appointed actuary and their opinions and ideas about how reserves should be set.

Just in terms of the general structure on the 2001 CSO, there's a terminal age of 121 years as compared to the 1980 CSO, in which the terminal age was 100 years. The 2001 table is constructed as a Select and Ultimate Table, whereas, the 1980 CSO was, originally, constructed as attained age. Then later there were 10-year select factors introduced, and then 20-year select factors through XXX. The 2001 CSO has a 25-year select period.

In terms of how the rates compare, Ultimate 2001 CSO runs from about 50% to 80% of the 1980 CSO at central issues ages 25 through 75. There's more variability for female nonsmokers than there is for the male population. The ratio also generally increases with age, so the slope at the older ages of the 2001 CSO Table is greater than the 1980 CSO. Then the exception to all of this is ultimate female smoker rates, which are higher than they were for the 1980 CSO for some of the older ages.

So what are the valuation implications of this? The 2001 CSO generally produces lower basic reserves, with the exceptions being, again, female smoker reserves. Differences tend to be greater at the younger ages and less at the older ages. For whole life, you see a similar kind of

pattern. The 2001 CSO ranged from about 80% to 90% of the 1980 CSO. The female smoker, again, is higher.

For UL, the valuation implications aren't as significant. This varies company by company and product by product. The valuation reserves are usually set for only the first five to ten durations. Thereafter, you hit the cash value floor, so it doesn't really have that significant of an effect. But for these initial durations, the reserves are lower.

This is where I think it starts to get interesting. The tax implications are definitely something that I think we're going to hear a lot more about in the next year now that the NAIC is going to go ahead and pass the regulation. For Internal Revenue Code 807(d), which is just tax reserves, you can use the 2001 CSO upon adoption of the Table by the 26th state, at which time it becomes the prevailing Table. There is a three-year transition period, so you can keep setting your reserves at 1980 CSO, which everyone is likely to do since it will be the higher level. You do need to use 2001 CSO Ultimate, versus Select and Ultimate, based on the fact that, as an industry average, it produces lower reserves. Then the 2001 CSO tax reserves are, generally, lower, except for female smokers.

For Section 7702 and 7702(A), the effective date for using the Table for these is the adoption of the Table by the 26th state, and as the code is currently written, there is no transition period. So there's potential IRS, audit and administrative issues of having a different Table for tax reserves than what you're using for Sections 7702 and 7702(A). Given the rules that are in place right now, I think most companies would wait until the end of the transition period before they set their reserves to a lower deductible limit and increase their taxes. So you would then have to move your funding calculations for Sections 7702 and 7702(A) to 2001 CSO before doing so for your tax reserves. For people that aren't aware, these are definitions of life insurance and modified endowment contracts. Again, you need to use 2001 CSO Ultimate, and it generally produces lower funding limits. The ranges are approximately 15% to 20% on average.

As for the product implications for term, you're going to see lower reserves and tax reserves, which could either increase profitability or allow for lower premiums. In the term market, obviously, you usually see the lower premiums. I'd liken UL death benefit protection products to term. Because most of them have the secondary guarantees now, many of the issues are the same. But this is where there's going to need to be a lot of analysis about how the deficiency reserves play against the basic reserves. Also, what are the tax implications? The different ages have different effects in terms of whether reserves decrease significantly or just decrease slightly and whether the guarantee period is a 10-year or a 30-year guarantee period. The product actuary is going to need to look at these things and make sure they understand how they're going to change. Just based on analysis we've done, it's likely that you'll see decrease in premium rates at the younger and older issue ages, because that's where there's a greater effect. In terms of the nonforfeiture implications, there's not a significant change for term in terms of when cash values would be created.

With product implications for whole life, you'd see a decrease in premium rates based on some of the tests we've done. You're looking at about 20% potential decreases. There are obviously lower guaranteed cash values.

For UL, some states actually require that your guaranteed cost of insurance (COI) rates are no greater than your valuation mortality rates. If companies need to decrease their guaranteed COIs, they are going to need to look at how they can reconfigure the profits that they were earning off of their COIs and the loads in their COIs. Perhaps they can come from other loads, like their premium and per thousand loads. Expect that there'll probably be a delayed implementation of 2001 CSO in UL because of this reconfiguring.

Another thing to keep in mind here are funding limits, which are going to be a significant issue for the cash value accumulation-type UL products, whether or not your product has moved to 2001 CSO. The funding limits will change when the 26th state adopts. As the IRC is currently written, whether or not you've reconfigured your product, there will be a change in the funding limits.

In summary, the Model Regulation was accepted. Guidance is definitely needed on the IRS issues, and the ACLI, I believe, is going to push the IRS to do so. There's the need for transition rules, but then there's also the issue that I neglected to mention on Section 7702. The Guideline Level Premium Test, the Cash Valuation Accumulation Test and the Seven Pay Premium Test all state that the maturity age needs to be between 95 and 100 years. Given that the 2001 CSO Table now goes out to 120, there's a question of whether or not they'll change those guidelines. There'll be significant work in updating product portfolios. Then there are potential systems implications involved with moving to a 25-year Select Table and moving to a 120-year terminal age on some legacy systems. That's it. I'll now turn it over to Christine.

MS. CHRISTINE E. DUGAN: There are a few recently approved guidelines that I'll be discussing, such as the focus on UL and variable UL policies. The first is Actuarial Guideline AXXX, which is going to be called AG38, which is appropriate given its numbering system. That essentially gives guidance on how to apply XXX to various policy designs that exist today. The second guideline is AG37, which gives direction to variable life reserves for guaranteed minimum death benefits (GMDBs). Then, I'll briefly talk about AG36, which is the application of Commissioners Reserve Valuation Method (CRVM) to equity-indexed life policies.

Let's start with Actuarial Guideline AXXX. Since XXX got adopted, there were a ton of questions regarding how to apply it to certain policy designs, and at the same time, a ton of creative, innovative initiatives out there to skirt the regulation's intent, so we'll call that "loophole exploitation" for purposes of today's conversation. The innovation of product design basically fell into two different camps, the first of which was to take what appears to be fully guaranteed policy features to the policyholder and really disguise those or mask those as partially guaranteed elements. There are such things as tying the ability to increase rates to an unlikely event like the Treasury rate falling below the 3% or something of that nature. The second camp includes policy designs, which tried to exploit the narrow interpretations of the regulation itself. Designs like shadow accounts fall into that camp. So companies implicitly or explicitly were basically trying to escape the increased reserve requirements put forth for XXX that are really involved to cover the risk and involved in guaranteeing the benefits and rates of return over periods of time.

Shadow accounts became prevalent because there was a contention that, again, given the literal wording of XXX, it didn't apply to shadow accounts. Obviously, people were trying to go forward with such devices. These are account values that develop using charges and credits that are more favorable to the policyholder than the contractural guarantees. Essentially, as long as the shadow account is positive, the policy stays in force. The benefit stays in force even if your account value or cash value goes negative.

Now, going back to why XXX came about, one of the key driving forces of XXX was to try to create a level playing field for all the companies writing term and UL products. Obviously, through the innovation efforts, such as shadow accounts, this driver was stymied, so the regulators pretty much had to go back and try to figure out what to do. The creative companies were reviewed as violating the spirit of XXX. The companies abiding by XXX had a market disadvantage, and there was a fear that the companies who were experiencing a loss of market share would go back on their own and start their own little innovation efforts, thereby perpetuating the trend.

Given the multitude of innovation efforts, and given the fact that the adoption to XXX actually was pretty level throughout the state approval process, there was a high level of frustration among the regulators about what they should do next. At one point, they even considered bringing in the Actuarial Board for Counseling and Discipline (ABCD) to go out and discipline those purported violators, which actually didn't happen. Regulators, again, felt the need to go back and try to create a level playing field, and AXXX was the outcome. They started this initiative in the summer of 2000.

What are the unique elements of this guideline? It's an interpretative and correctional guideline. It's kind of a little hand slapping for certain companies. It's like saying, "It's great you've been thinking outside the box, and we love the fact that you're thinking outside the box, but you have to stop." It explicitly puts forth how XXX should be interpreted, and it does this by these examples. It actually puts forth eight examples of questionable policy features, and then

explicitly states how you need to reserve for them. It states explicitly that the examples outlined within the guideline are not inclusive, meaning that new designs will come about. You still need to maintain compliance with the letter and the spirit of XXX.

Concerning the guideline's effective date, it was a pretty controversial development process. You see that companies out there are saying that the fact that the guideline even came about is pretty much an indication that the intent of XXX is not clear within the wording. Therefore, if you're trying to put forth an interpretative guideline, how can you apply it retroactively? You had the other camp of regulators that are saying no, no, no; the intent was always clear, so it's going to be retroactive. At the end of the day, most of the sections are retroactive.

As I mentioned, I'm going to focus my discussion mostly on UL products, but I'll just mention that examples 1 through 6 of the guideline focus on guaranteed premium rates within term policies. However, they also apply to such things as premium loads, COIs and UL contracts that can be manipulated to kind of put forth a no-lapse or secondary guarantee.

Example number 7 within the guideline addresses premium catch-up provisions. The provision basically guarantees that coverage remains in force as long as the specified premium is paid each year. The insured has the unlimited right to make up the past deficiencies. In the view of XXX, these pretty much constitute unexpired secondary guarantees, since the guarantee itself can be reinstated until the end of the second guarantee period. Policyholders can reinstate the secondary guarantee or move from a shorter secondary guarantee period to a longer secondary guarantee period by merely paying the differential and the premium required to maintain the guarantee.

So what are the reserve implications? XXX requires that when a policy contains more than one secondary guarantee, the minimum reserve should be the greatest of the respective minimum reserves necessitated when more than one exists. Essentially, given the fact that these catch-up provisions are unexpired secondary guarantees, you have to abide by the greatest of the respective minimum's provision. Regardless of whether or not the policyholder meets the requirement to maintain the secondary guarantee, the reserves need to be computed, assuming that the longest secondary guarantee period is met. However, the companies can, fortunately,

reduce those basic and deficiency reserves by any catch-up amount required to maintain the guarantee. An anomaly here is that, indeed, AXXX does provide some relief over a strict interpretation of XXX.

Example 8 of the guideline specifically addresses secondary guarantee requirements, which essentially encompass both the accumulation of premium provisions and shadow accounts. Regarding the accumulation of premium provisions, prefunded amounts need to get it to the basic reserves. Prefunded amounts are basically any premiums paid that would make the future premiums required to keep the benefit in force smaller. After that, the total reserve gets capped by the statutory net single premium covering the remainder of the guarantee period.

So what are some of the issues or ramifications of AXXX? The approach itself concerning the secondary guarantees applies only to actual premium payment history. Some would say that an approach that relies on actual premium payment history is actually a modification to both XXX and the UL Model Regulation. Remember, the UL Model Regulation explicitly talks about the determination of premiums at issue date, and, obviously, you can't determine prepayments at issue date. So regarding prepayments, what AXXX says, is, if you prepay a bit of your premium, you're going to develop a higher cash value than if you had paid the premiums annually. Since the obligation to keep the secondary guarantee in force requires less future premiums, AXXX says that you now have to set up a higher reserve, assuming that no prepayments are made. That is kind of illogical, but it says, "the additional reserves in addition to any UL Model Regulation floor for highly funded policies." Ultimately, the reserving implications from this guideline would negate any potential for loan to reserve stream required by strict XXX adherence. At the end of the day, the impact of the guideline would mean repricing of UL products at least with respect to prepayments, and some system modifications will need to be made in order to handle the actual premium payment history.

AXXX was approved by LHATF and the A Committee at this summer's 2002 meeting and approved last week by the Plenary Committee, so it is a done deal now known as AG38. All of the non-shadow account guidance is retroactive to the earlier of the state's adoption of XXX and January 1, 2001, which is the date that XXX became part of the minimum standards for codification

purposes. All of the shadow account guidance is applicable to policies issued on or after January 1, 2003. Again, this whole nature of whether or not to make it retroactive and what they did with the split of the kind of shadow account guidance was controversial, and it's definitely an exception to how most guidelines come about and what the most effective dates are for guidelines.

Concerning the marketplace impact, it seems as though most of the examples outlined within the guidelines, most of which I didn't explicitly address concerning term policies, will probably go away. As Donna Claire mentioned, there were some very unique arrangements out there that companies were doing that I actually thought were pretty creative, but it doesn't seem like they'll be in existence much longer, given the guidelines. Product development actuaries will have to come back with new and approved protection-oriented features for policies. Shadow accounts will likely remain, due to the fact that there's flexibility created by these funds that both the policyholders and companies are enjoying at this point. That is all with Actuarial Guideline AXXX.

Let's now move to AG37, which deals with GMDBs and reserving of GMDBs for variable life contracts. The focus of the guideline was essentially to clarify the projected assumptions that should be used, the methodologies that should be used to reserve in the statutory reserve liabilities for GMDBs. The projection assumptions are directly related to the reserves because they're used to project out guaranteed death benefits within the contract.

What's a GMDB? It's similar to a secondary guarantee offered in a regular fixed-account UL product. It's essentially any guarantee that provides a death benefit that would otherwise not be provided if the provisions didn't exist. A primary example of the GMDB is a no-lapse guarantee where, regardless of what the market performance is, and regardless of what your account value is, if some qualifying event such as a payment of accumulative premium is met, you stay in force.

The evolution of AG37 was essentially due to a lack of standard methodology. There were four sources of guidance available, the Standard Valuation Law, the Variable Life Insurance Model Regulation, which was revised in both 1983 and 1989, the UL Model Regulation, and Regulation XXX. Given that not all these were approved and that there were revisions to the Variable Life

Model Regulation, there was general confusion about what to do. So AG37 emerged, essentially, due to a lack of uniform state adoption of both versions of the Model Regulation. In fact, there were states that hadn't passed either version of the Variable Life Model Regulation, so, again, we have a little bit of confusion out there. In practice, companies were interpreting both the assumptions and the application of the regulations inconsistently.

Going quickly through the 1983 to 1989 pieces of the regulation, problems with the 1983 revisions were that they treated flexible premium policies differently than scheduled premium policies, and they didn't anticipate the conditional types of GMDBs available today, which require certain conditions be met to maintain a death benefit guarantee. The 1989 revision made some steps forward in that it actually had a uniform approach for both fixed and flexible policies, but it was adopted in very few states. So AG37 came about to provide guidance.

Briefly, concerning the 1983 revisions and how reserves were disclosed, for fixed premium contracts, the GMDB was the greater of the one-year term costs and the difference of the GMDB and the death benefit provided for in the account value, assuming a one-third drop in account value. It was the greater of that and the attained age level reserve. For flexible premium contracts, it was the total of all term costs for the GMDB excess. Note that term costs are for the duration of the guarantee period and not limited to one year.

Concerning the 1989 revisions, they collapsed both the fixed and flexible premium sections. The GMDB reserve was defined to be equal to the greater of the one-year term reserve, based again on the one-third drop in account value, and an attained age level reserve following parallel mechanics to the original version, but allowing funding over the revenue collection period instead of the premium-paying period. The term reserve portion is limited to one year, regardless of whether premiums are fixed or flexible. This has an impact of greatly reducing the reserve. Also, future required premiums essentially don't have an impact on the calculation. Note also that the attained age level reserve can be minimized if you set the required premiums at the valuation premium level.

What did AG37 do? Concerning the fixed versus flexible premium methodologies, it clarified the use of the attained age level methodology for the flexible premium contracts with structures parallel to those offered in fixed premium contracts. If a contract specifies a required premium in order to maintain the GMDB, the contract essentially constitutes a fixed-premium contract for the GMDB reserve purpose, regardless of whether or not it has a flexible chassis.

The guideline coincides with the 1999 treatment, and it was viewed that the 1989 revision would apply better to today's GMDB-type products. Specific language was added to the guideline to emphasize the fact that XXX was not applicable to variable life products. It's clearly stated within the guideline that XXX does not apply to reserving for variable life and variable UL. In particular, the 19-year select factors and X factors of XXX do not apply to reserve calculations.

As I mentioned, initially, the primary focus of AG37 was to clarify projection assumptions to be used in order to determine GMDB benefits. We'll just quickly go through the miscellaneous assumptions that are set forth here. Regarding GMDB duration, the GMDB must be assumed to remain in effect for the maximum period of the GMDB. The guarantee period coverage is determined assuming that all contingent requirements are met.

Regarding the interest rate, both the general and separate account fund balance is projected forward at the valuation interest rate. The assumed investment rate, if any, is used when determining the one-year term reserve.

Regarding expense loads, they're not explicitly mentioned in relation to the projection assumption, so by default, you can make the assumption that you don't have to use them.

Regarding cost of insurance rates, they're specified as minimum valuation mortality, and there's no direct relationship in relation to the guaranteed COI rates given as some had previously assumed. This, in particular, allows for the use of 10-year select factors from the 1980 CSO, regardless of what's used for the base policy reserve calculation, and will allow the use of the Select and Ultimate 2001 CSO table.

Policy options and benefits are assumed to remain unchanged. For example, whatever fund allocation distribution you have at the valuation date is assumed to remain intact, and the same thing with the death benefit option, etc.

Regarding the projection period, you have to project over the entire guarantee period, regardless of whether positive or negative values result, and obviously, you take the negative values to be zero.

Regarding the GMDB revenue, recall that the reserves get established over the period of time in which revenue is collected. The revenue here is defined as either policy charges or premiums, whether implicit or explicit.

Just as a side note, an example of an implicit premium would be one where you have a premium necessary to maintain some kind of target policy value in order to maintain the secondary guarantee benefits.

Actuarial Guideline 37 was adopted at the fall 2001 NAIC meeting. It's included in the March 2002 version of the Accounting Practices and Procedures Manual. It affects all variable life contracts, and must be in compliance effective December 31, 2001. Because of the increased reserves that may result from application, certain design changes may be in order. You could note that you can actually minimize the GMDB reserve by having to require premiums that are nondeficient and by assessing some kind of charge unrelated to premiums collected in order to retain the benefit. That's part of the whole GMDB revenue collection period element of this. We have seen some companies seeking relief from insurance departments by either claiming some kind of redundancy in the reserve relative to the basic reserve or just the fact that the impact has been a little bit too dramatic and other issues like that.

Let's move on to AG36. I was trying to find some kind of meat with this guideline and, essentially, there has really been no kind of controversial elements of this guideline, only because AG35, which addresses equity-indexed annuities, has already run the gamut. Since this succeeded it, there's not too much controversy here. The purpose of AG36 is to clarify the

statutory regulatory requirements for equity-indexed UL. The goal here was to achieve consistency with the CRVM minimum statutory formula reserves. Obviously, equity-indexed UL gets some portion of the credited interest amount tied to a selected equity index. Overall, equity-indexed UL has not been as developed as equity-indexed annuities. At least that's my thought. As further designs emerge, obviously, the guideline might have to be revised, or some kind of interpretatives might need to be put forth. It applies to all equity-indexed UL policies, regardless of issue date, that are subject to CRVM requirements of the UL Model Regulation.

Essentially, there are three computational methods put forth within the guideline. The type 1 methodology seems to be consistent with CRVM when the "Hedged as Required" criteria is met. The other two are identified if you can't meet the "Hedged as Required" criteria. Ultimately, the reserves are the greater of the reserve calculated under the UL Model Regulation and that produced using AG36.

Again, three methods. Type 1 is the Implied Rate Guarantee Method. Type 2 is the CRVM Method with updated average market value. Type 3 is the CRVM Method with updated market value. Use of type 1 methodology is allowed only upon quarterly certification that you meet either the basic or the option replication criteria. To briefly define these criteria, the basic criteria puts forth a required equivalence of characteristics between the option policies held and the options embedded within the liabilities with respect to certain things such as the index being used, the averaging features, the options price, the type of option, the term period, etc. Then the hedge amount must substantially cover the maximum of the account value or the reserve. The company must have a specific plan for hedging the risk associated with certain things like death benefits, surrender amounts, unanticipated premium patterns, and things of that nature. The company must have a system in place that effectively monitors the hedging strategies, and a stated maximum tolerance level for differences between the expected and the actual performance of the hedge.

Regarding the option replication criteria, we have this equivalence of characteristics issue, but now it has between the target of the option replication strategy and the options embedded within the liabilities. The notional amount must substantially cover the maximum of the account value

or the reserve that is measured at the end of each quarter. The next three of these criteria essentially follow that of the basic requirements.

As a last note, there are additional requirements here for the Maximum Tolerance Test and the Compliance Evaluation Test. The Compliance Evaluation Test is basically a retrospective correlation test performed at least weekly where companies have to compare the change in market value of the hedge portfolio with the change of market value of the target of the option replication strategy. The guideline puts forth a maximum dollar amount of the differential that's allowed; that's 10% of the beginning period market value of the target of the option replication strategy. Essentially, if you go beyond the maximum, it gives guidance as to what to do.

To go through some of the implied rate guaranteed mechanics, essentially, all you're doing here is using the UL Model Regulation methodology, but substituting in what's called an implied guaranteed rate with a guaranteed rate used within the UL Model Regulation. On the issue date you have the GMP premium, the Guaranteed Maturity Fund (GMF), and net premiums are calculated according to the UL Model Regulation. You defined an implied rate for the initial term, which is equal to the guaranteed rate, plus an accumulated option cost. Your accumulated option cost is the cost of the option that provides index-based benefits for the first term in excess of any other interest guarantees that exist for the term. Regarding valuation date calculations, you essentially go back and recalculate the implied rate using the same approach as defined in both, but now you have a different time frame.

The type 2a methodologies are deemed to be consistent with CRVM if certain prerequisite criteria are met and if a reasonableness and consistency of assumption certification is provided and signed by the appointed actuary. The prerequisite criteria are as follows. With the type 2a mechanics, you essentially have issue date calculations that parallel the type 1 mechanics. You have valuation date calculations that essentially take the greater of the GMF or the policy value projected forward until the end of the term and add it to the accumulated option costs for the current term. You project the combined amount to determine the future benefits.

Type 2 methodology is not conditioned upon meeting the "hedged as required" criteria or any kind of type 2a prerequisite criteria. You have to submit quarterly certification signed by the actuary dealing with the assumptions underlying the option market values and consistency assumptions between those market values and the statement value of the option supporting the equity-indexed business.

For the mechanics of type 2, again, for the issue date calculations, you take the fund and you project it forward at the initial term to guaranteed rate, and then you add it into your accumulated option costs. Project the combined amount to determine future benefits. Use the UL Model Regulation for the Guaranteed Minimum Premium (GMF) and net premiums. On the valuation date, you take the greater of the GMF for the projected policy value and add it to the cost again. Then project both amounts forward using the policy guarantees to determine future benefits.

What are the ramifications of AG36? Given the nature of the option costs that are embedded within the calculations, there's increased communication that needs to occur with the investment department. There's increased written communication and disclosure requirements that need to be provided to insurance departments. Other than that, there's no real specific complications that have been cited anywhere.

In summary, have these guidelines caused many headaches? I think the real migraine started when things like XXX first got hypothesized. I think most of us are beyond the migraine point and headed into that recovery period, given the fact that these guidelines have been around. We've known about them and, whether or not they were adopted at a certain point, we've been pretty well prepared to deal with them. Obviously, there's going to be another round of fun and exciting product innovation, which is good, because we can start that thinking outside the box again. I and others see a lot of opportunity for reinsurers—things like XXX helping companies out with deficiency reserves and that kind of a work product. That's all I have to say. I'll give it back over to Stacy.

MS. LAIFOOK: Thanks, Christine. We have a couple minutes if anyone wants to ask any questions.

MR. JERRY HUGHES: I have a question about XXX. I'm with Lafayette Life Insurance Company. The question probably shouldn't be necessary, but I'll pose it anyway. It is relative to doing the testing of your X factors, where many companies use the Monte Carlo testing. In a situation where the company has a X factor of less than one on a small block of its business (call it term policies) and has a large block of business for which the X factor equals one, say (traditional whole life), the testing has to be done on the term block. Is it also required on the permanent block?

MR. SPENCER: I believe you have to do the testing in any situation where your X factor is less than one, so presumably in that situation, for the whole life block, you would not have to perform that testing. You perform it on the term block. The question is, do you have to aggregate it at the total. It's not going to hurt, certainly, to do that testing at that level. I will confess that I haven't thought much about it, because the situations that we deal with on the reinsurance side are situations where the companies are using X factors less than one or greater than one in the case of maybe a simplified issue product. Certainly, by performing that analysis and rolling it back up, you'd want to show it both at a block level and at the company level in total. You'd combine those two together.

FROM THE FLOOR: I have a question for Stacy. Suppose you have a 1980 CSO policy that suffers material change in the 2001 CSO era. Are the seven pay factors computed on 1980 CSO or 2001 CSO?

MS. LAIFOOK: I'm sorry, could you repeat the last part?

FROM THE FLOOR: You have a material change put by unnecessary premium. Are the seven pay factors based on 1980 CSO or 2001 CSO at the time of material change?

MS. LAIFOOK: It depends on when the policy was issued. I believe the seven pay factors are based on the funding table at time of issue.