

ASSET THE SOCIETY OF ACTUARIES LIABILITY NEXUS GENERATIONS MANAGEMENT

Techniques and Practices for Insurance Companies

GAINING THE COMPETITIVE ADVANTAGE.

NORTH AMERICAN VENUE
THE WESTIN NEW YORK TIMES SQUARE
NEW YORK, NEW YORK

APRIL 4-7, 2005



SOCIETY OF ACTUARIES

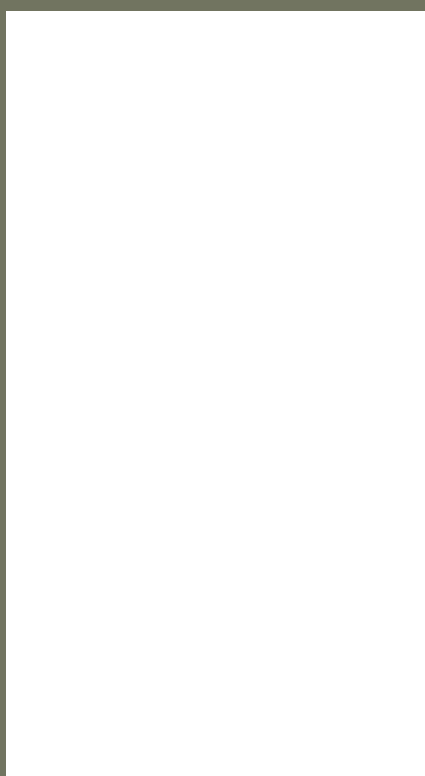
GAINING THE COMPETITIVE ADVANTAGE.

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ASSET THE SOCIETY OF ACTUARIES LIABILITY NEXUS GENERATIONS MANAGEMENT

Techniques and Practices for Insurance Companies





Not so long ago, ALM was synonymous with interest rate risk management. And while interest rate risk remains a focal point of ALM, the scope today has broadened considerably.

Over the last few years, Enterprise Risk Management (ERM), has been the center of attention in the risk management world. ERM comprises the management of all the risks facing an enterprise—both financial and non-financial. Notwithstanding the much deserved fanfare ERM has received of late, there has been a lot of activity in the area of ALM, which remains a vital part of an overall ERM framework and scope.

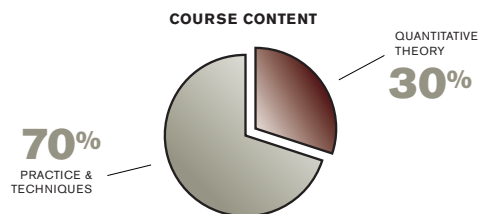
BEYOND RISK MITIGATION

Companies recite different reasons for doing ALM. While some companies view ALM as a compliance and risk mitigation exercise, others have started using ALM as a strategic framework to achieve the company's financial objectives. Some of the business reasons companies now state for implementing an effective ALM framework include gaining competitive advantage and increasing the value of the organization. The way in which ALM is practiced has also changed. Many will recall that ALM used to stand for "Asset Liability Matching" before becoming known as "Asset Liability Management". ALM has gone beyond measurement and mitigation of the risk exposure and contemplates an optimization framework for management of the financial risks.

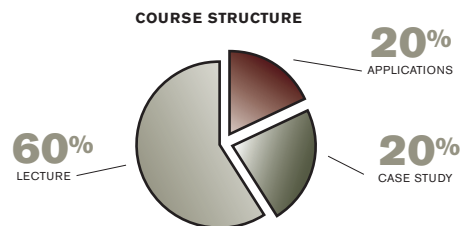
FROM THEORY TO PRACTICE

One of the first things ALM practitioners discover is that a lot of what they need to know to do their jobs is not found in any textbook. While the current literature offers a sound grounding in ALM theory, there is a paucity of industry specific and nation specific guidance for the practitioner. ALM as practiced differs between banks and insurance companies, and further differences exist for life insurance, P&C and pension plans. Nation specific issues relating to accounting methods, regulatory requirements and/or products offered shape the way ALM is practiced in Canada, the US and abroad.

This course covers the theory behind ALM, then provides the practitioner with the knowledge needed that is not covered in the textbooks. The focus of the course is on ALM techniques and practices for insurance companies.



Through the case studies and in-class applications, participants will learn by "doing". The state of ALM practice in North America will be explored, and participants will gain an appreciation of how the ALM paradigm has changed and how companies can take ALM beyond risk mitigation.



Enrollment is limited to ensure the quality of the case studies and applications and provide the optimal learning environment.

WHO SHOULD ATTEND

This three and a half day course is targeted to four distinct groups:

- **Senior Management** looking to gain a firm grasp of the financial risks facing their organizations, make more effective business decisions and use ALM strategically, beyond risk mitigation and compliance
- **ALM Practitioners** perhaps already well versed in the underlying theory but who want to gain further deep insight into the tools and techniques that are used in industry practice today
- **Professionals** looking to enter into the field of ALM and who are willing to invest some additional time pre-course to learn the basic concepts
- **Actuaries** looking to gain a more in-depth knowledge of this key area of practice and fulfil PD credits towards their FSA designation

WHAT YOU WILL GAIN

This course takes the participant beyond the theory that can be learned in text books and provides a unique hands-on training experience not found anywhere else. In addition to the case study approach, which is used heavily, the participant will learn and apply various ALM tools and techniques to quantify the risk exposure and execute various ALM strategies. Case study groups will be carefully selected to ensure complementary backgrounds. Participants can expect the following:

- Learn how to implement ALM as a strategic decision making framework to gain competitive advantage and increase organizational value
- Ensure that appropriate policies and control procedures are in place
- Practice advanced techniques for measuring risk exposure
- Learn the limitations and pitfalls of various risk metrics
- Learn how to understand and effectively communicate risk exposure and how to make more effective decisions
- Formulate an ALM strategy
- Execute a dynamic hedging strategy with equity guarantees
- Produce an ALM report that effectively communicates the exposure
- Participate in a mock ALM Committee meeting

Pre-reading material will be provided so that valuable class time is not spent covering topics that may already have been learned in advance by some and to ensure a threshold level of knowledge for all participants.

LAPTOP COMPUTERS

Course delegates are required to bring their own personal laptop computer to be used during the course. Required software includes Microsoft Excel (2000 or later; with macros enabled) and Adobe Acrobat Reader (5.0 or later) .

A CD drive is necessary.

¹Adobe Acrobat Reader can be downloaded at www.adobe.com

CONTINUING PROFESSIONAL DEVELOPMENT

This course has been approved as eligible for Professional Development Credit by the Society of Actuaries as follows:

ALM Essentials = 5 PD units

Techniques and Practices = 18 PD units

Techniques and Practices + ALM Essentials = 23 PD units

Visit the SOAWeb site (www.soa.org) for more information on PD units.

ATTIRE

Business casual attire is appropriate for this seminar.

ABOUT

NEXUS GENERATIONS

Nexus Generations was founded in 2002 to provide actuarial consulting services and advanced risk management solutions to the financial services industry. More information about Nexus Generations is available at www.nexusgenerations.com

SOCIETY OF ACTUARIES

The Society of Actuaries is a nonprofit professional society of 17,000 members involved in the modeling and management of financial risk and contingent events. The mission of the SOA is to advance actuarial knowledge and enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal problems involving uncertain future events.

UPCOMING ALM COURSES

Mark your calendars for these courses offered in 2005:

BRUSSELS, BELGIUM

MAY 16-19, 2005

HONG KONG

FALL, 2005

Check www.soa.org or www.nexusgenerations.com for more information.

Customized in-house training is also available for your organization. Contact Nexus Generations for more information.

FACULTY

CHARLES L. GILBERT, FSA, FCIA, CFA

Charles L. Gilbert provides Asset Liability Management consulting to the financial services industry. Prior to forming his own firm in 2002, Mr. Gilbert was the leader of the Asset Liability Management initiative for Tillinghast – Towers Perrin in North America.

Mr. Gilbert is the chairperson of the Society of Actuaries Exam Committee for Course 8V – Investments and has been active within the Education and Examination Committees since 1994. He is also chairperson of the Canadian Institute of Actuaries Working Group on Asset Liability Management, co-founder of the Asset Liability Management Practitioners Association in Canada, chairperson of the Society of Actuaries Task Force on ALM Principles, representative for the Society of Actuaries and the Canadian Institute of Actuaries on the International Actuarial Association Financial Risks Committee, treasurer of the Society of Actuaries Risk Management Section Council, a member of the Society of Actuaries Risk Management Task Force, a member of the Canadian Institute of Actuaries Practice Standards Council, and a member of the Society of Actuaries Finance Practice Advancement Committee. Mr. Gilbert is the immediate past chairperson of the Canadian Institute of Actuaries Committee on Investment Practice, past secretary of the Society of Actuaries Investment Section Council and recently served as a director of the Board of the Canadian Institute of Actuaries.

Mr. Gilbert has conducted training sessions for regulators and rating agency analysts on Asset Liability Management in Canada and the US and is a frequent speaker and moderator at industry gatherings.

K. RAVINDRAN, PH.D.

Dr. K. (Ravi) Ravindran is the founding principal of Annuity Systems Inc., which provides risk management systems to companies globally. Dr. Ravindran has worked with companies worldwide in all aspects of the risk management process including building the models, implementing the systems, designing the processes, ensuring controls, and formulating and executing hedges. He has personally managed the risk exposure associated with Variable Annuity products on assets under management of over USD 60 billion and has provided risk management consulting on the equity exposure associated with assets under management of almost USD 200 billion. Dr. Ravindran has also helped risk-manage Equity Indexed Annuity business and has provided extensive risk management services to the energy markets. Dr. Ravindran ran the exotic derivatives desk for Toronto Dominion Bank globally and has executed derivatives trades for clients as part of his risk management services. He has traded and made markets in nearly every category including equity, interest rate, currency, commodity, mortality and credit.

Dr. Ravindran was previously an Adjunct Professor at the University of Waterloo and the University of Calgary. He is the author of the book "Customized Derivatives: A Step-by-Step Guide to Using Exotic Options, Swaps, and Other Customized Derivatives". Some of his other articles have formed part of the Society of Actuaries examination syllabus.

ROBERT R. REITANO, PH.D., FSA, MAAA

Robert R. Reitano is Senior Vice President and Chief Investment Strategist of John Hancock Financial Services in Boston. He is the Chief Investment Officer, Board Member and Chairman of the Committee of Finance for John Hancock Variable Life Insurance Company and Investors Partner Life Insurance Company, and Board Member of other John Hancock subsidiaries. He is Chairman of three investment oversight committees, responsible for the Company's Pension Plans, 401(k) plans, and its Variable Series Trust. He also serves as the Company's Derivative Supervisory Officer under the New York Insurance Department approved Derivative Use Plan.

Dr. Reitano has been a member of several industry task forces and committees and a frequent speaker at industry gatherings. He has presented several educational seminars on his research for the Society of Actuaries. His award winning papers have appeared in the *Journal of Portfolio Management*, the *North American Actuarial Journal*, the *Transactions of the Society of Actuaries* and the *Actuarial Research Clearing House*.

Dr. Reitano serves on the editorial staff of several finance and actuarial journals and is an Adjunct Professor of the Mathematics Department of Boston University, where he teaches courses in the Fundamentals of Finance, and Computational Methods of Mathematical Finance, in the department's Master of Arts program in Mathematical Finance.

WHAT SOME OF OUR PARTICIPANTS HAD TO SAY:

"This was by far the best course I have ever attended."

– LONDON PARTICIPANT

"Hands-on experience through case studies, in particular the mock ALM Committee meeting, brings theoretical knowledge into practice and helps visualize what will need to be tackled in real-life."

– TOKYO PARTICIPANT

"The staff was fabulous in providing support and guidance. This was a very positive experience."

– PHOENIX PARTICIPANT

"The life analyst now has a better understanding and an arsenal of tools and questions to better analyze the risks of the life insurance companies."

– STANDARD AND POOR'S PARTICIPANT

"I especially liked the opportunity to participate by doing the applications. The utilities provided are very helpful."

– QUEBEC CITY PARTICIPANT

"Course material is comprehensive, practical and very useful. Case studies and applications very useful in cementing ideas."

– LONDON PARTICIPANT

"This is an excellent seminar and I will strongly recommend the course to my colleagues."

– TOKYO PARTICIPANT

"Lectures were excellent. Assignments and case studies were great opportunities to apply what was presented. Thank you!"

– QUEBEC CITY PARTICIPANT

PAST ALM COURSES

Over 200 professionals world-wide have participated in ALM Techniques and Practices:

PHOENIX, UNITED STATES
DECEMBER 4-7, 2003

LONDON, UNITED KINGDOM
JUNE 20-24, 2004

STANDARD AND POOR'S*
NEW YORK, UNITED STATES
JULY 13-14, 2004

TOKYO, JAPAN
JULY 27-31, 2004

QUEBEC CITY, CANADA
SEPTEMBER 26-30, 2004

* **SPECIAL CUSTOMIZED EDITION OF ALM TECHNIQUES AND PRACTICES**

MONDAY, APRIL 4, 2005

ALM ESSENTIALS

- ▶ **ALM Essentials** is designed to provide a review of fundamental ALM concepts. This full day course consists of lectures and practice sessions aimed at supplementing the pre-reading material and helping prepare participants for the intense Techniques and Practices that will follow.

- 7:00** Registration
- 7:30** Breakfast
- 8:00** • **Welcome, Course Overview and Introductions**
C. Gilbert
- **Overview of ALM Risk Metrics and Strategies**
C. Gilbert
- **Partial Durations and Convexity**
R. Reitano
- 10:00** Break
- 10:30** ☐ **Calculate risk metrics and analyze exposure**
R. Reitano
- **ALM Framework Implementation**
C. Gilbert
- 12:00** Lunch
- 13:00** • **Financial Markets and Market Mechanics**
K. Ravindran
- 14:30** Break
- 14:45** • **Financial Economics—Review of Essential Concepts**
C. Gilbert
- **Portfolio Theory**
R. Reitano
- ☐ **Determine asset mix using efficient frontier analysis**
R. Reitano
- 16:00** End

▶ REGISTER FOR ALM ESSENTIALS AND ATTEND THE EVENING LECTURES AND RECEPTION FOR TECHNIQUES AND PRACTICES.



REGISTER FOR TECHNIQUES AND PRACTICES AND RECEIVE ALL THE COURSE MATERIALS, UTILITIES AND TEMPLATES FOR ALM ESSENTIALS. FOR AN ADDITIONAL \$200 USD, ATTEND ANY OR ALL OF THE LECTURES AND PRACTICE SESSIONS FOR ALM ESSENTIALS. ▶

MONDAY, APRIL 4, 2005

TECHNIQUES AND PRACTICES—DAY 1

- ▶ **Asset Liability Management Techniques and Practices** is conducted over a three and half day period. Participants will spend 34 hours together including 22 hours of lectures, case studies and application exercises.

- 15:00** Registration
- 17:00** • **Welcome, Course Overview and Introductions**
C. Gilbert
- 17:30** • **Anatomy of a Failure**
C. Gilbert
- **The Term Structure of Interest Rates**
R. Reitano
- ☐ **Derive spot rate curve using bootstrapping techniques**
C. Gilbert
- 17:30** ☐ **Calculate implied forward curve**
R. Reitano
- 19:00** Reception with Faculty/Informal Q&A
- 21:00** End

TUESDAY, APRIL 5, 2005

TECHNIQUES AND PRACTICES—DAY 2

- 8:00** Breakfast
- 8:30** • **Valuation Methods**
C. Gilbert
- ☐ **Value assets and liabilities**
R. Reitano
- 10:00** Break
- 10:15** • **Derivatives**
K. Ravindran
- **The Binomial Model**
R. Reitano
- **Exotic Derivative Structures**
K. Ravindran
- 12:00** Lunch
- 13:30** • **Identifying Risks**
C. Gilbert
- **Measuring Exposure**
R. Reitano
- ☐ **Quantify interest rate risk exposure**
C. Gilbert
- **Limitations of Risk Metrics**
R. Reitano
- 15:30** Break

- 16:00** 📖 *Apply ALM techniques (interest rate risk)*
C. Gilbert, K. Ravindran and R. Reitano
- 📖 *Formulate ALM strategies (interest rate risk)*
C. Gilbert, K. Ravindran and R. Reitano
- 17:30** End

WEDNESDAY, APRIL 6, 2005

TECHNIQUES AND PRACTICES—DAY 3

- 8:00** Breakfast
- 8:30** 📖 *Rebalance portfolio to within risk limits*
C. Gilbert, K. Ravindran and R. Reitano
- 📖 *Measure impact of change in interest rates*
C. Gilbert, K. Ravindran and R. Reitano
- 🗣️ **Introduction to Simulations**
C. Gilbert
- 10:45** Break
- 11:00** 📖 *Generate risk profile using stochastic techniques*
C. Gilbert
- 🗣️ **Brownian Motion**
K. Ravindran
- 12:15** Lunch
- 13:30** 🗣️ **Diffusion Processes for Interest Rates**
R. Reitano
- 🗣️ **Calibration of Models**
K. Ravindran
- 14:45** Break
- 15:00** 🗣️ **ALM Techniques and Strategies—Equity Risk**
C. Gilbert and K. Ravindran
- 🗣️ **Dynamic Hedging**
K. Ravindran
- 17:00** End

THURSDAY, APRIL 7, 2005

TECHNIQUES AND PRACTICES—DAY 4

- 8:00** Breakfast
- 8:30** 📖 *Execute dynamic hedge for variable annuity*
K. Ravindran
- 🗣️ **ALM Practices**
C. Gilbert
- 10:30** Break

KEY

- | | |
|---------------|---------------|
| 🗣️ Lecture | 📖 Case study |
| 📖 Application | 🗣️ Open forum |

📖 CASE STUDY

The case study approach will be used heavily throughout this course. Participants will interact with other industry professionals and learn through doing. Case studies for this course include:

- Reviewing ALM practices of leading insurance companies
- Rebalancing Portfolio (recommending trades based on existing exposure and calculating resulting exposure)
- Participating in a mock ALM Committee Meeting
- Developing an ALM strategy for a block of business

Small workgroups will be assigned for the case studies. Some case studies will require the use of a laptop computer.

📖 APPLICATION

Applications are hands-on training exercises where participants learn by applying tools and techniques to real life examples. Applications covered in this course include:

- Calculating interest rate risk and equity risk exposures
- Bootstrapping the term structure and calculate implied forward curve
- Using stochastic techniques to develop a risk profile
- Preparing ALM report
- Quantifying the value added by ALM
- Executing a dynamic hedging strategy for a product

The exercises in the application sessions are designed to be completed by each participant individually. All applications require the use of a laptop computer. ALM tools and analytics will be provided.

- 10:45** 🗣️ **Policies and Controls**
R. Reitano
- 🗣️ **Risk Reporting and Communication**
C. Gilbert, K. Ravindran, R. Reitano
- 📖 *Prepare ALM Report*
C. Gilbert
- 12:00** Lunch
- 13:30** 📖 *Review ALM practices of leading insurance companies*
C. Gilbert, K. Ravindran and R. Reitano
- 14:00** Break/Working Session
- 14:45** 📖 *Participate in mock ALM Committee meeting*
C. Gilbert, K. Ravindran and R. Reitano
- 16:45** Review and Closing Remarks
C. Gilbert
- 17:00** End of Course

COURSE MATERIAL

PRE-COURSE PACKAGE

1. Detailed Course Overview
2. Pre-reading Package
3. Bibliography / List of Suggested Background Readings
4. SOA ALM Specialty Guide
5. Survey Questionnaire
 - (used to determine group assignments for case study, focus presentations)

ON-SITE PACKAGE

1. Handouts of All Presentations (bound copy and CD)
2. ALM Tools (coded in Excel)
 - Bootstrapping techniques
 - Price sensitivity charts and statistics
 - Approximation techniques using Taylor Series Expansion
 - Impact of changes in interest rates on economic value
 - Stochastic models
 - Risk profile
 - Replicating portfolios and hedging techniques
 - Calculating volatility and building correlation matrices
 - Dynamic hedging techniques
3. Case Study Material
 - Annual reports
 - Regulatory frameworks regarding risk management
4. Sample Policy Templates
 - ALM Policy Statement and Procedure Manual
5. Sample ALM Report Template
6. ALM Committee Package
 - Agenda
 - Minutes
 - Reports
7. Group Assignments

ACCESS TO FACULTY

In addition to scheduled class time, questions and discussion are encouraged outside of the lectures and practice sessions. Participants will have the ability to interact with faculty informally throughout the course.

HOTEL INFORMATION

HOTEL INFORMATION:

The Westin New York Times Square
270 West 43rd Street
New York, NY 10036
212/201-2700

Toll-free reservations:

800/228-3000 (Continental U.S. and Canada)
800/228-1212 (Hawaii and Alaska)

Room Rates:

\$249 single or double occupancy

Cutoff date:

Friday, March 4, 2005

We have arranged for hotel reservations to be made by telephone or on-line. To reserve the rate quoted in the brochure, the following procedures should be completed:

- Make your reservations by the cutoff date Friday, March 4, 2005)
- Use the phone numbers quoted in this brochure and identify yourself as part of the Society of Actuaries
- For convenient on-line reservations, please visit the SOA Web site (www.soa.org) for more information.

Rooms are available at the rate quoted above as long as there are rooms remaining in the Society of Actuaries' block or until the cutoff date of March 4, 2004. After this date, rooms will be on a space and rate available basis.

HOTEL CANCELLATION

A deposit, with a major credit card, equal to one night's stay is required to hold each reservation. This deposit is refundable if notice of cancellation is received 72 hours prior to your scheduled arrival and a cancellation number is obtained. All deposits will be charged at the time the reservation is made. No show reservations will forfeit the full first night's deposit.

EARLY DEPARTURES

All guests will be asked at check-in to verify their departure date. At that time you may change your departure date without penalty. An early departure fee may be charged to any guest who decides to depart before that verified date.

LOCATION & AIRLINE

The Westin New York Times Square is located in the heart of Times Square, about nine miles or 40 minutes from LaGuardia. Typical taxi fare is \$35. Kennedy International Airport is located about 15 miles or one-hour from the Westin New York Times Square. Typical taxi fare is \$45.

REGISTRATION

You may register using two methods:

Register **ONLINE** (credit card required):

Go to www.soa.org and click on *Meetings/Seminars, Events, and Continuing Education Programs*.

Register **BY MAIL**:

Mail your registration form with check payable to:

Society of Actuaries

ALM Course - New York

P.O. Box 71293

Chicago, IL 60694

If you wish to send a wire transfer as payment please email us at wiretransfer@soa.org for specific wire transfer instructions.

Payment in full must accompany your registration and must be made in U.S. funds or equivalent.

Participants are strongly encouraged to register before March 7 in order to gain access and go through the Pre-Course Material.

If registering within five business days of the program, you are required to register on-site at the program. Please call the Society of Actuaries, Continuing Education Department at 847.706.3540 to confirm space availability.

REGISTRATION CONFIRMATION

Confirmations are e-mailed upon completion of registration.

REGISTRATION FEE

Registration fees are shown for ALM Essentials, Techniques and Practices or both. Your registration fee includes:

- All breakfasts, lunches and networking receptions as indicated
- All related course materials including policy templates and utilities
- Opportunities for one-on-one Q&A with the faculty

FEE	ALM ESSENTIALS	TECHNIQUES & PRACTICES*	TECHNIQUES & PRACTICES + ALM ESSENTIALS**
Member of an Actuarial Organization	\$900 USD	\$4,300 USD	\$4,500 USD
Non-Member	\$975 USD	\$4,575 USD	\$4,775 USD

* Registrants for Techniques & Practices also receive all course materials, utilities and templates for ALM Essentials.

**Registrants for Techniques & Practices are entitled to attend the lectures and practice sessions for an additional \$200 USD.

ALL CANCELLATIONS MUST BE MADE IN WRITING NO LATER THAN MARCH 18, 2005 TO THE CUSTOMER SERVICE DEPARTMENT (CANCEL@SOA.ORG) IN ORDER TO OBTAIN A REFUND OF THE REGISTRATION FEE. THE SOCIETY OF ACTUARIES WILL REFUND THE REGISTRATION FEE, MINUS A PROCESSING FEE OF \$500. REFUND REQUESTS RECEIVED AFTER THE CONCLUSION OF THE SEMINAR WILL NOT BE HONORED. THE SOCIETY RESERVES THE RIGHT TO CANCEL ANY SEMINAR IF CONDITIONS WARRANT. IN THE EVENT OF SUCH CANCELLATIONS, REGISTRATION FEES WILL BE REFUNDED IN FULL. WE ARE NOT RESPONSIBLE FOR ANY DISCOUNTED AIRFARES OR HOTEL PENALTIES THAT AN ATTENDEE MAY INCUR DUE TO CANCELLATION.

REGISTRATION FORM

Payment must be made in full in order to register.

Please print:

Preferred Name on Badge _____

First Name _____

Last Name _____

Company _____

Address _____

City _____

State/Prov. _____

ZIP/PC _____

Phone _____

Email Address _____

Check all that apply:

Member of an Actuarial Organization

ALM Essentials Techniques and Practices Both Events
 \$900 USD \$4,300 USD \$4,500 USD

Non-Member

ALM Essentials Techniques and Practices Both Events
 \$975 USD \$4,575 USD \$4,775 USD

PAYMENT INFORMATION

Check Enclosed (Payable to Society of Actuaries)

TOTAL ENCLOSED

00-230114-00000-1011

Special meal requirements: Kosher Vegetarian Fruit Plate

Please check here if you require specific aids or services to fully participate in this meeting. Audio Visual Mobile

ASSET
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 LIABILITY
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 MANAGEMENT
Techniques and Practices for Insurance Companies

THE WESTIN NEW YORK TIMES SQUARE
 NEW YORK, NEW YORK
 APRIL 4-7, 2005