SOCIETY OF ACTUARIES
Retirement Benefits United States – Company/Sponsor Perspective

Exam CSP-RU

Date: Friday, May 11, 2007
Time: 8:30 a.m. – 1:15 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 90 points.

   The points for each question are indicated at the beginning of the question. Questions 1, 3, 6, 8, 9, 10, pertain to the Case Study, which is enclosed inside the front cover of this exam booklet.

2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.

3. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.

2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.

3. The answer should be confined to the question as set.

4. When you are asked to calculate, show all your work including any applicable formulas.

5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets since they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate Exam CSP-RU.

6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

BEGINNING OF EXAMINATION
CSP – RU: RETIREMENT BENEFITS UNITED STATES
COMPANY/SPONSOR PERSPECTIVE

This question pertains to the Case Study.

1. *(9 points)* NOC's Vice-President of Human Resources is concerned about NOC's ability to attract and retain experienced mid-career salaried employees. He is considering replacing NOC's existing retirement program with the program offered by NOC's main competitor, as follows:

- A DC ERP with the employer contributing 10% of the employee's earnings annually.
- No DB ERP.
- No DB SRP.
- No retiree health care plan.

(a) Evaluate NOC's business risks with respect to its existing retirement program.

(b) Assess the alternative program offered by NOC's main competitor in the context of retirement risks for a mid-career salaried employee.

(c) Assess the VP's proposal and recommend a course of action. Justify your recommendation.

2. *(7 points)* A 30 year old recently became a member of a defined contribution pension plan.

(a) Propose strategies to mitigate the risks associated with her participation in a DC plan.

(b) She recently received a pension statement from her employer showing a projected replacement ratio of 50% at age 55. Her financial advisor projected a replacement ratio of 90% at age 55. Describe the possible reasons for the different replacement ratio projections.

This question pertains to the Case Study.

3. *(11 points)* Vosne has adopted accounting changes similar to FAS 158 effective as of December 31, 2005, which is NOC's fiscal 2005 year end date.

You are given the following with respect to the National Oil Full-Time Hourly Union Pension Plan as at December 31, 2006:

Fair Value of Assets	$ 565,000,000
Projected Benefit Obligation	$ 810,000,000

(a) Evaluate the impact, before deferred tax effects, of these accounting changes on NOC's Accumulated Other Comprehensive Income and Net Postretirement Benefit Asset/Liability as measured on December 31, 2005.

(b) Determine the change, before deferred tax effects, in NOC's Accumulated Other Comprehensive Income and Net Postretirement Benefit Asset/Liability during 2006.

(c) Evaluate whether these accounting changes will provide better information to shareholders of NOC and other users of NOC's financial statements. Justify your response.

4. *(10 points)* A company is considering introducing stock options as a part of the compensation of its senior executives.

(a) Assuming the Black-Scholes model is used, describe the six required inputs that will be needed to determine the fair value of the stock options. Assess the impact that changes in each of the inputs would have on the fair value, assuming all other inputs are held constant.

(b) The CEO is concerned with aligning the senior executives' interests with those of the company's shareholders. Describe ways in which long-term incentive plans could be used to help achieve that goal.

(c) The senior executives have requested that the compensation and benefits programs, including the new stock option plan, be modified in order to protect them from the potential negative effects of a future take-over. Describe the methods that could be used to accomplish this.

5. *(8 points)* XYZ Company invests its entire pension fund in fixed income securities.

(a) Describe the principal fixed income portfolio management strategies that could be utilized.

(b) The CFO wishes to add international bonds to the portfolio to take advantage of higher available yields. Analyze his recommendation.

This question pertains to the Case Study.

6. *(7 points)* NOC has replicated, subject to local tax law, both the National Oil Full-Time Salaried Pension Plan and the National Oil Full-Time Salaried Supplemental Retirement Plan for employees at its U.S. subsidiary. The executives in the U.S. have now asked for the supplemental plan to be secured.

(a) Describe the advantages and disadvantages of the executives' request from the company's and executives' perspective.

(b) Evaluate the available methods for securing the supplemental plan benefits from the company's and the executives' perspectives.

7. *(8 points)* You are given the following information in respect of two U.S. companies:

	Company A: Non-Taxable Entity	**Company B: Taxable Entity**
Company Balance Sheet		
- Liabilities	$50,000,000	$800,000,000
- Assets	$150,000,000	$900,000,000
Defined Benefit Pension Plan		
- Pension Benefit Obligation	$10,000,000	$750,000,000
- Fair Value of Assets	$9,000,000	$700,000,000
Pension Fund Asset Allocation		
- Equities	$6,000,000	$500,000,000
- Bonds	$3,000,000	$200,000,000
Company Net Income	$5,000,000	$20,000,000
Pension Expense	$3,000,000	$10,000,000

(a) Describe an appropriate risk management framework for a typical defined benefit plan sponsor.

(b) An actuary has advised both companies that they should invest 100% of pension fund assets in bonds. Evaluate this recommendation.

This question pertains to the Case Study.

8. *(10 points)* The CFO and CEO of NOC are discussing the investment strategy for the pension fund for the National Oil Full-Time Salaried Pension Plan. The CFO proposes to invest 80% of the fund's assets in equities and 20% in fixed income securities and the CEO proposes investing 20% of the assets in equities and 80% in fixed income securities.

(a) Evaluate the impact of the alternative proposals on shareholder value.

(b) Compare and contrast the other stakeholders' views on the alternative proposals.

(c) Assuming that the fiduciary obligations in Vosne are similar to those in the United States and Canada, describe NOC's fiduciary responsibility in regards to the investment of the pension fund assets.

This question pertains to the Case Study.

9. *(13 points)* NOC will terminate 2,100 active salaried employees at December 31, 2006.

As a result, Vosne will require NOC to:

- partially terminate the National Oil Full-Time Salaried Pension Plan;
- provide immediate vesting to all affected employees; and
- settle the obligation in respect of the accrued benefit of all affected employees, based on years of service and best average earnings as of December 31, 2006.

You are given:

- NOC expects the discount rate to be 5.50% per annum at December 31, 2006;
- NOC's expected return on asset assumption for 2007 is 7.50%;
- There is a 2006 actuarial experience loss of $55,000,000 measured at December 31, 2006;
- Employer contributions, benefit payments, and return on assets for 2006 are as expected;
- Employer contributions and benefit payments for 2007 are expected to be the same as for 2006;
- As at December 31, 2006, for the 2,100 employees terminated:
    - The projected benefit obligation immediately before their termination is $350,000,000;
    - The projected benefit obligation is reduced by $100,000,000 when salary projections are removed;
    - The cost to settle the benefits is $325,000,000;
    - The 2006 current service cost is $25,000,000.
- NOC's accounting policy when both a curtailment and settlement occur at the same time is to account for the curtailment first.

(a) *(8 points)* Determine the effect of the partial termination on the fiscal year 2006 pension expense. Show all work.

(b) *(5 points)* Estimate the 2007 pension expense. Show all work.

This question pertains to the Case Study.

10. *(7 points)* The national union has approached NOC's hourly employees with an offer to join its Multi-employer Pension Plan (MEPP). As the actuary for the MEPP and the representative for NOC's hourly employees during negotiations, you have been asked to evaluate the potential impact of this offer on the employees and on the MEPP.

Formulate your response.

****END OF EXAMINATION****