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December 5, 2007

Ms. Fay Kopp
Deputy Executive Director
North Dakota Retirement & Investment Office
P.O. Box 7100
Bismarck, ND 58507-7100

Re: Experience Study Changes

Dear Fay:

In addition to the material on the census projections provided in my letter dated Nov. 19, 2007, the Employee Benefits Programs Committee (EBPC) requested additional background information about the changes in actuarial assumptions made following the last two experience studies, in 2000 and 2005.

As you know, every five years TFFR has us prepare an Experience Study in which we review all of the actuarial assumptions and methods. We compare our assumptions to what actually happened over the last few years preceding the study, and we recommend changes if we believe they are advisable. The Board of Trustees then decides whether to accept, reject or modify the assumptions we recommended. In both 2000 and 2005, the Board adopted all of our recommendations.

2000 Experience Study

Between the July 1, 1999 and the July 1, 2000 actuarial valuations, we carried out an experience study. Here is a summary of our recommendations, taken from our 2000 report:

- Change the inflation rate from 4.00% to 3.00%.
- Leave the investment return rate unchanged at 8.00%. I.e., there would be an increase in the real rate of return from 4.00% to 5.00%.
- Change the salary increase assumption to the sum of (i) the 3.00% inflation assumption, (ii) an additional 1.00% assumed increase applied to all members, and (iii) a service-related increase applied to members with less than 15 years of service. (This change modified the components that comprise the salary increase assumption, but had almost no impact. The average expected increase was 5.3% per year on both the old and the new assumptions.)
- Change the non-disabled mortality assumption to the rates in the 1994 Uninsured Pensioner Mortality Table, set back two years for males and three years for females.

- Increase the disability incidence rates by 60%.

- Make no change to the disabled mortality assumption.

- Make no change to the termination assumptions for males and females.

- Change the retirement rates to new tables, with rates a function of sex, age and type of retirement (reduced or unreduced).

- Revise the age/sex/pay profile for new entrants – used to determine the normal cost – to one based on new members joining TFFR in the 1998-99 fiscal year.

- Change the method used to determine the actuarial value of assets from one that smoothes realized and unrealized gains and losses over five years to one that smoothes differences between actual and expected returns over five years.

The combined effect of all the changes was to lower the unfunded actuarial accrued liability (UAAL) by $81.6 million and to increase the margin from 1.66% to 4.08%. The main reason for the decrease in liability was the change in the method for determining the actuarial value of assets.

2005 Experience Study

Then in 2005, following the July 1, 2004 actuarial valuation, we did another experience study, and recommended the following changes:

- Change the salary increase assumption to the sum of (i) the 3.00% inflation assumption (unchanged), (ii) an additional 1.50% assumed increase applied to all members (increased from 1.00%), and (iii) a service-related increase applied to members with less than 15 years of service (modified). This increased the average expected increase to about 5.7-5.8%, or about 0.5%/year more than under the prior assumption set.

- Change the non-disabled post-retirement mortality assumption to the rates in the 1994 Uninsured Pensioner Mortality Table, set back three years for males and two years for females. (Previously the table used was the same 1994 Uninsured Pensioner Mortality Table, but set back two years for males and three years for females.)

- Change the pre-retirement mortality rates from the same table used for nondisabled post-retirement mortality to 65% of those rates.

- Decrease the termination assumptions for males and females by 20% at all ages and durations.

- Change the retirement rates to new tables, with rates a function of sex, age and type of retirement (reduced or unreduced).

- Revise the age/sex/pay profile for new entrants—used to determine the normal cost—to one based on new members joining TFFR in fiscal years 2000 through 2004.

We also recommended changing the way the ARC (the Annual Required Contribution under Governmental Accounting Standard No. 25, the benchmark used for determining the margin). The ARC is defined as the sum of the employer normal cost and a charge to amortize the UAAL. The latter charge had been determined by amortizing the UAAL over a twenty-year period as a level payment. We recommended changing this to a thirty-year amortization with payments that increase 2% per year, in line with expected payroll growth.

The effect of these changes was to increase the UAAL by $59.1 million, mainly because the salary increase and retirement assumptions were made more conservative. The margin was improved by 0.46% as a result of these changes, mainly because of the change in how the ARC was determined. (In other words, the margin, which was negative, became slightly less negative as a result of the changes.)

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Please let us know if the Committee has any questions about the changes, what the experience showed, or why we recommended these changes. Of course we have no objection to your sharing the complete reports with any interested members of the EBPC. The next experience study is scheduled to occur following the completion of the July 1, 2009 actuarial valuation.

Sincerely,

J. Christian Conradi

J. Christian Conradi
Senior Consultant

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