

LOUISIANA STATE EMPLOYEES'
RETIREMENT SYSTEM
JUNE 30, 1991
ACTUARIAL VALUATION

Charles G. Hall
A.S.A., M.A.A.A., M.C.A.
Enrolled Actuary

HALL ACTUARIAL ASSOCIATES

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October 9, 1991

Board of Trustees
LOUISIANA STATE EMPLOYEES'
RETIREMENT SYSTEM
Post Office Box 44213
Baton Rouge, Louisiana 70804

Ladies and Gentlemen:

This report presents the results of the actuarial valuation of assets and liabilities, as well as funding requirements, for the Louisiana State Employees' Retirement System as of June 30, 1991.

This report has been prepared in accordance with generally accepted actuarial principles and practices and to the best of my knowledge, fairly reflects the actuarial present value of accrued benefits of the Louisiana State Employees' Retirement System.

In preparing this valuation, I have relied upon the information provided regarding plan provisions, plan membership, plan assets and other matters as detailed in the exhibits of this report. In particular, I have relied upon the statement of assets as certified by Coopers and Lybrand, Certified Public Accountants.

The present values shown herein have been estimated on the basis of actuarial methods as specified in Louisiana Revised Statutes Title 11 Section 22(6), and assumptions which are appropriate for the purposes of this valuation, are reasonable in the aggregate and when applied in combination represents my best estimates of the anticipated experience under the plan.

A brief summary of the more important figures developed in this valuation, with comparable results from previous valuations are as follows:

	<u>June 30, 1991</u>	<u>-----Prior Years-----</u> <u>June 30, 1990</u>	<u>June 30, 1989</u>
I. Membership Census			
1) Retirees	25,129	24,920	24,901
2) Actives	70,927	66,711	62,566
3) DROP	346	N/A	N/A
II. Annual Benefits	\$ 237,750,804	\$ 235,696,106	\$ 231,668,250
III. Total Payroll	1,368,479,924	1,226,065,067	1,141,080,541
IV. Assets	2,516,742,397	2,321,259,028	2,173,401,501
V. Investment Yield			
Realized Income	9.96%	9.85%	9.21%
Actuarial Value	10.00%	10.27%	10.06%
VI. Cost to Fund Annual Pension Accruals (Normal Costs)	175,166,466 12.80%	156,222,504 12.74%	153,546,508 13.46%
VII. Unfunded Actuarial Accrued Liability	1,982,569,933	1,888,847,501	1,848,531,476
VIII. Funded Percentage	55.94%	55.14%	54.03%
IX. Funding Requirements to Pay (Mid-year Payment)			
1) Employee Contribution Rate	106,154,511 7.5%	94,982,406 7.5%	88,526,682 7.5%
2) Employer Contribution Rate - Current Year	185,288,551 13.1%	163,177,125 12.9%	86,357,368 7.3%
3) Projected Employer Contribution - Next Year	185,436,747 12.3%*	186,259,770 13.8%	159,424,146 12.7%

The above funding requirements measure the cost of benefits that were in effect on June 30, 1991, plus Acts of the 1991 Legislative Session which have prospective effects on current active members.

*Excludes funding for COLA granted pursuant to Act 5 of the Third Extraordinary Session.

Current Funding

The Actuarial Valuation for the plan year ending June 30, 1991 discloses a general increase in the value of the plan's unfunded accrued liability as well as prospective funding requirements. It is generally appropriate for the current valuation process to disclose the source or cause of any significant changes in the plan from year to year. Changes that occur are usually the result of changes in actuarial assumptions, gains or losses resulting from actual experience which differs significantly from expected plan experience.

The basic elements of the annual required contribution are the normal cost and amortization of the Unfunded Actuarial Liability (UAL). The normal cost is the annual cost to provide an additional year of benefit accrual. The normal cost is divided into two parts, the employee portion and the employer portion, both expressed as a percentage of payroll. Act 81 of the 1988 Legislative Session provides for the amortization of the initial UAL, plus subsequent changes in benefits, methods or gain/loss experience.

To assist the Board of Trustees in reconciling changes in the unfunded actuarial accrued liability, the following gain/loss analysis is presented as follows:

CHANGE IN UNFUNDED LIABILITY

Unfunded Liability 6/30/90		\$ 1,888,847,501
INCREASES		
Interest on Unfunded Liability	\$ 155,829,918	
Actuarial Methods	26,415,170	
Actuarial Assumptions	35,873,752	
Experience Loss	36,758,989	
Incurred Increases	254,877,829	
DECREASES		
Investment Gains	53,455,057	
Employer Amtz. Payment	106,397,077	
Employer Credit	1,303,263	
Incurred Decreases	161,155,397	
Unfunded Liability 6/30/91		\$ 1,982,569,933

Exhibit 1 p. 2 V.B.

The employer contribution rate established by the Actuarial Forecast Committee for the 1990-1991 plan year was 13.8%. The actual employer contribution rates determined by this valuation for the current plan year is 13.5%, and 13.1% when adjusted for the prior year's employer credit. The current adjusted rate represents a significant change in the required employer's contributions when compared to the projected rates. Since the increase in required contributions is attributable to many factors, the following sections address the source and respective impact to the required employer contribution rate.

Investment Experience

The investment yield on the actuarial value of assets during the last five (5) years has been as follows for plan years ending June 30:

<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>5 Yr. Aver.</u>
10.8%	9.8%	10.1%	10.3%	10.00%	10.02%

The net actuarial rate of return assumed in the valuation was 8.25%. For the plan year ending June 30, 1991 the net yield to Actuarial Assets was more than the long term Actuarial Investment Assumption used to project benefits. The result was a net investment experience gain of \$53,455,057 above projected investment income.

Act 81 of 1988 requires this investment gain to be amortized over a fifteen year period as a level dollar amount. Therefore, the employer's contribution will be reduced by \$6,094,373 during the next 15 years. This amortization credit represents a .43% reduction in the rate projected by the Actuarial Forecast Committee.

Plan Experience

The actuary is charged with making the best estimate of future plan experience to properly fund future benefits. If the actual experience differs from the projected experience a gain or loss occurs. This gain or loss is then amortized over a fifteen year period to make a mid-course adjustment in future funding requirements. During the 1990-1991 plan year, the system suffered a \$36,758,989 experience loss. This loss will increase the employer's contribution by \$4,190,867 during the next fifteen years and represents a .29% increase in the rate projected by the Actuarial Forecast Committee.

Funding as a Percentage of Payroll

The funding requirements mandated by Act 81 require the employee to contribute 7.5% of payroll for the plan year beginning in 1989. The employer will pay a percentage of the normal cost plus a dollar amount sufficient to amortize the unfunded liability over a 40 year period. To convert the dollar amortization payment to a percentage of payroll would suggest that the aggregate employer contribution rate would remain level as a percentage of pay provided aggregate salaries increase in unison with the rate of increase in annuity payments. This would imply that aggregate salaries should increase at a rate of at least 4% during the next four (4) years. To determine whether this is a reasonable expectation, aggregate salary growth during the past six (6) years is illustrated as follows:

<u>June 30</u>	<u>Payroll/\$1000</u>	<u>Percent Increase</u>
1986	1,136,203	(.9%)
1987	1,093,997	(3.7%)
1988	1,111,015	1.6%
1989	1,141,080	2.7%
1990	1,226,065	7.4%
1991	1,368,480	11.6%

During the last five (5) years the aggregate salaries have increased at an annualized rate of 3.79%. If this trend continues during the next five (5) years the percentage of pay required to amortize the unfunded liability can be expected to increase in the absence of other experience gains or losses.

Comments and Disclosures

Exhibit 3 "Pension Accounting and Financial Disclosure" contains the ten (10) year comparative statistical studies required by the Governmental Accounting Standards Board.

Finally, the actuarial disclosure form required by the Actuarial Department of the Legislative Auditor's office (see Exhibit 7) makes specific provisions for the determination of whether or not a retirement system is systematically approaching the targeted funding ratio.

This is an important consideration for both retired members and members of the Board of Trustees. The Board is specifically prohibited from granting a cost-of-living raise to retirees and survivors by Act 256 of the 1986 regular legislative session unless the system has met the Funding Target.

Board of Trustees
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HALL ACTUARIAL ASSOCIATES

For the plan year ending June 30, 1991 the funding target is .62510, which is greater than the current .55936 funding ratio. Therefore, the Board is prohibited from granting a cost-of-living increase by statute.

The format of this report was designed with the intent of highlighting the pertinent results of the valuation's funding requirements. Should you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Charles G. Hall

Charles G. Hall, A.S.A., M.A.A.A.
Actuary

CGH/tt

Enclosure

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HALL ACTUARIAL ASSOCIATES

EXHIBIT 1
DEVELOPMENT
OF
COSTS, LIABILITIES AND CONTRIBUTIONS

Normal Costs and Accrued Liabilities are calculated in accordance with the Projected Unit Credit Cost Method, and the Actuarial Assumptions outlined in Exhibit 6 based on the Provisions of the Plan as summarized in Exhibit 5.

	<u>June 30, 1991</u>		<u>---Prior Year---</u> <u>June 30, 1990</u>	
	<u>Dollar</u> <u>Amount</u>	<u>% of</u> <u>Salary</u>	<u>Dollar</u> <u>Amount</u>	<u>% of</u> <u>Salary</u>
I. Normal Costs				
(to fund annual pension accruals)				
Active Members with Complete Data				
a) Retirement Benefits	\$ 132,434,956	9.68%	\$ 119,019,965	9.71%
b) Disability Benefits	6,638,642	.49%	6,395,438	.52%
c) Survivor Benefits	7,205,686	.53%	6,926,817	.57%
d) Voluntary Termination	26,142,182	1.90%	21,780,284	1.78%
e) Expenses	2,700,000	.20%	2,100,000	.17%
TOTAL	<u>175,166,466</u>	<u>12.80%</u>	<u>156,222,504</u>	<u>12.74%</u>
II. Actuarial Accrued Liability				
a) Active Members				
1) Retirement Benefits	1,924,481,888		1,724,103,313	
2) Disability Benefits	83,400,041		79,117,909	
3) Survivor Benefits	77,923,081		75,736,947	
4) Voluntary Termination	142,009,145		131,002,827	
	<u>2,227,814,155</u>		<u>2,009,960,996</u>	
b) Retired and Inactive Members				
1) Regular Retirees	1,830,861,147		1,751,308,667	
2) Disabled Retirees	106,344,048		101,548,474	
3) Survivors	215,959,769		235,182,025	
4) Vested Deferred	12,114,634		12,830,490	
5) Contributions Refunded	5,768,659		7,359,798	
6) DROP Deposits	2,412,337		N/A	
	<u>2,173,460,594</u>		<u>2,108,229,454</u>	
c) SUB TOTAL	4,401,274,749		4,118,190,450	

Exhibit 1 (Continued)Costs, Liabilities & ContributionsHALL ACTUARIAL ASSOCIATES

	<u>June 30, 1991</u>	<u>---Prior Year---</u> <u>June 30, 1990</u>
II. Actuarial Accrued Liability		
c) SUB TOTAL (Preceding page)	\$ 4,401,274,749	\$ 4,118,190,450
d) Adjustments to Regular Plan		
1) Active Judges	86,499,591	81,233,913
2) Active Legislators	11,537,990	10,682,166
Adjusted TOTAL	<u>4,499,312,330</u>	<u>4,210,106,529</u>
III. Assets	2,516,742,397	2,321,259,028
IV. Unfunded Actuarial Accrued Liabilities - Projected Unit Credit*	1,982,569,933	1,888,847,501
a) Change over prior year	93,722,432	40,316,025
b) Funded Percentage	55.94%	54.14%
V. Employer Contributions To Fund Current Plan Year*		
a) Employer Portion of Normal Cost	72,653,899	64,681,223
b) Amortization Payments	113,937,915	105,829,286
c) Previous Years Deficit (Credit)	<u>(1,303,263)</u>	<u>(7,333,384)</u>
TOTAL Required Contribution	185,288,551	163,177,125
	13.1%	12.9%
Plus State Appropriation	3,917,102	3,766,444
Actuarial Forecast Rate	13.8%	10.7%
VI. Projected Employer Contributions To Fund Next Plan Year*		
a) Employer Portion of Normal Cost	77,472,987	71,085,241
b) Amortization Payments	118,688,904	112,706,156
c) Previous Years Deficit (Credit)	<u>(10,725,144)</u>	<u>2,468,373</u>
TOTAL Projected Contribution	185,436,747	186,259,770
	12.3%**	13.8%
Plus State Appropriation	4,073,786	3,917,102
VII. Current Payroll		
Projected Payroll - Mid Year	1,368,479,924	1,226,065,067
Projected Payroll - Next Year	1,415,393,487	1,266,432,075
	1,509,275,660	1,347,459,790

*Dollar Amounts reflect estimated payments due mid-year on January 1st per Act 81.

**Excludes funding for COLA granted pursuant to Act 5 of the Third Extraordinary Session.

HALL ACTUARIAL ASSOCIATES

EXHIBIT 2

FINANCIAL SUMMARY
STATEMENT OF REVENUES AND EXPENSES
FOR FISCAL YEAR ENDING

	<u>June 30, 1991</u>	<u>-----Prior Years-----</u> <u>June 30, 1990</u>	<u>June 30, 1989</u>
<u>OPERATING REVENUES:</u>			
1. Contribution Income			
Member			
Employer	\$ 102,446,164	\$ 91,552,972	\$ 81,925,366
	142,951,649	93,724,467	134,142,798
2. Other Income			
Legislative Appropriations	3,426,547	3,336,498	
Miscellaneous	5,055,495	3,262,174	0
TOTAL CONTRIBUTIONS	<u>253,879,855</u>	<u>191,876,111</u>	<u>216,239,726</u>
3. Investment Income			
Realized Income	226,880,011	207,570,969	181,952,253
Less, investment expenses	-1,612,590	-937,750	-773,083
TOTAL INVESTMENT INCOME	<u>225,267,421</u>	<u>206,633,219</u>	<u>181,179,170</u>
4. Total Revenues	479,147,276	398,509,330	397,418,896
<u>OPERATING EXPENSES:</u>			
1. General Administration			
Other Expenses	2,667,230	2,098,180	1,777,230
	478,160	479,490	490,618
2. Benefits Paid			
a) Pension Benefits	240,622,226	234,066,890	228,603,084
b) Return of Contrib.	<u>22,955,119</u>	<u>26,880,996</u>	<u>32,548,038</u>
3. Total Operating Expenses	266,722,735	263,525,556	263,418,970
<u>NET INCOME:</u>	212,424,541	134,983,774	133,999,926

EXHIBIT 2 (Continued)
Financial Summary

HALL ACTUARIAL ASSOCIATES

**FINANCIAL SUMMARY
STATEMENT OF ASSETS
FOR FISCAL YEAR ENDING**

	<u>June 30, 1991</u>	<u>June 30, 1990</u>	<u>Prior Years</u> <u>June 30, 1989</u>
ASSETS:			
1. Short Term Assets			
Cash in Banks	\$ 587,476	\$ 737,635	\$ 299,716
Commercial/Certificates	42,895,391	30,455,734	21,740,000
Securities	258,718,293	119,993,709	313,492,095
2. Bonds (at amortized cost)			
U.S. Government Agency	225,542,518	426,710,507	446,929,887
United States Issues	594,916,253	664,016,754	516,653,038
Corporate Issues	345,857,864	174,836,669	225,484,710
Long Term/Financial	333,270,687	219,619,388	60,826,443
3. Equities			
Common Stock	490,793,975	534,201,809	408,469,824
Preferred Stock	6,390,043	5,965,627	4,812,585
Fixed Assets	5,436,954	5,648,222	5,913,518
Mortgages - Real Estate	91,986,767	66,001,640	78,411,722
4. Receivables - Payables	84,625,391	20,409,316	50,579,758
TOTAL ASSETS			
Equities at Cost	2,481,021,612	2,268,597,070	2,133,613,296
Equities at Market	2,534,565,881	2,359,880,281	2,212,541,595
Market Value	2,552,855,804	2,353,328,804	2,214,488,938
RATIO: ASSETS/EXPENSES:	9.30	8.61	8.10
INVESTMENT YIELD:			
Realized Income	9.96%	9.85%	9.21%
Yield to Actuarial Value	10.00%	10.27%	10.06%
Five Year Actuarial Value	10.02%	10.58%	10.63%
Yield to Market Value	9.05%	9.66%	
ACTUARIAL VALUE OF ASSETS:			
TOTAL ASSETS	2,534,565,881	2,359,880,281	2,212,541,593
Change in Unrealized (G/L)			
Plan Year - 2 (wt. 1/4)	38,491,979	40,436,320	N/A
Plan Year - 1 (wt. 2/4)	12,354,912	38,491,979	40,436,320
Plan Year (wt. 3/4)	2,697,378	12,354,912	38,491,979
Actuarial Value of Assets	2,516,742,397	2,321,259,028	2,173,401,501

HALL ACTUARIAL ASSOCIATES

EXHIBIT 3
**PENSION ACCOUNTING
AND
FINANCIAL DISCLOSURE**

The Governmental Accounting Standards Board (GASB) was established as an arm of the Financial Accounting Foundation in April, 1984 by amendment to the Foundation's certificate of incorporation and by-laws. GASB's objective is to promulgate standards of financial accounting and reporting relative to the activities and transactions of state and local governmental entities. GASB is the successor organization to the National Council on Governmental Accounting. The following disclosures and statistical tables are in accordance with the NCGA's Statement No. 6.

	<u>June 30, 1991</u>		<u>June 30, 1990</u>	
	<u>Dollar Amt.</u>	<u>% of Payroll</u>	<u>Dollar Amt.</u>	<u>% of Payroll</u>
Actuarial Present Value of projected benefits for:				
1) Retirees & Beneficiaries	\$2,155,577,301	158%	\$2,088,039,166	170%
2) Terminated vested members	17,883,293	1%	23,803,945	2%
TOTAL	<u>2,173,460,594</u>	<u>159%</u>	<u>2,108,229,454</u>	<u>172%</u>
Actuarial Present Value of Credited Projected Benefits for active members:				
1) Member Contributions	674,210,732	49%	615,420,307	50%
2) Employer Contributions				
Vested Portion	1,312,863,335	96%	1,150,144,840	94%
Non-vested Portion	<u>338,777,669</u>	<u>25%</u>	<u>336,311,928</u>	<u>27%</u>
TOTAL	<u>2,325,851,736</u>	<u>170%</u>	<u>2,101,877,075</u>	<u>171%</u>
Total Actuarial Present Value of Credited Projected Benefits	4,499,312,330	329%	4,210,106,529	343%

The total actuarial present value of credited projected benefits increased by \$289,205,801 from June 30, 1990 to June 30, 1991. There were no changes in benefit provisions during the year. The increase in total Actuarial Present Value of Credited Projected Benefits due to Board approved changes in Actuarial Assumptions was \$62,288,922. There was a net experience gain of \$16,696,068.

EXHIBIT 3 (Continued)**Pension Accounting & Financial Disclosure****HALL ACTUARIAL ASSOCIATES****STATISTICAL DATA**

**Comparative Summary of Net Assets Available for Benefits
and
Total Actuarial Present Value of Credited Projected Benefits**

Fiscal Year	Net Assets Available for Benefits	Total Actuarial Present Value of Credited Projected Benefits*	Percentage Funded
1982	1,054,705,338		
1983	1,202,159,339	2,614,568,703	40.3
1984	1,362,152,461	2,800,646,912	42.9
1985	1,520,811,190	2,783,530,447	48.9
1986	1,715,788,614	3,043,552,222	50.0
		3,209,233,411	53.5
1987*	1,874,257,838		
1988	2,019,831,530	3,564,219,401	52.6
1989	2,173,401,501	3,845,252,565	52.5
1990	2,321,259,028	4,021,932,977	54.0
		4,210,106,529	55.1
1991	2,516,742,397	4,499,312,330	55.9

Analysis of the percentage funded over a period of years will give a relative indication of the financial strength of the Louisiana State Employees' Retirement System.

*Credited Projected Benefits were calculated beginning with the June 30, 1987 Actuarial valuation in accordance with The National Council on Governmental Accounting Statement No. 6. Prior to 1987, "Entry Age Normal" accrued benefits are illustrated.

STATISTICAL DATA

**Comparative Summary of Unfunded Actuarial Present Value
of Credited Projected Benefits
and
Annual Active Member Payroll**

Fiscal Year	Unfunded Actuarial Present Value of Credited Projected Benefits*	Annual Active Member Payroll	Percentage Payroll
1982	1,559,863,365		
1983	1,598,487,573	1,080,372,007	144.4
1984	1,421,377,986	1,118,060,866	143.0
1985	1,522,741,032	1,125,544,718	126.3
1986	1,493,444,797	1,146,506,762	132.8
		1,136,202,813	131.4
1987*	1,689,961,563		
1988	1,825,421,035	1,093,997,409	154.5
1989	1,848,531,476	1,111,015,208	159.0
1990	1,888,847,501	1,141,080,541	162.0
		1,226,065,067	154.1
1991	1,982,569,933	1,368,479,924	144.9

*Unfunded Actuarial Present Value of Credited Projected Benefits were calculated beginning with the June 30, 1987 Actuarial Valuation in accordance with The National Council on Governmental Accounting Statement No. 6. Prior to 1987, "Entry Age Normal" unfunded actuarial liabilities are illustrated.

Pension Accounting & Financial Disclosure

STATISTICAL DATA

Comparative Summary of Actuarial Values and
Percentage Covered by Net Assets Available for Benefits
(in million of dollars)

Actuarial Present Value of Credited Projected Benefits* for

Fiscal Year	(1) Retirees and Survivors	(2) Terminated Vested Members	(3) (4) Current Actives Member. Emplr. Contr. Contr.		Net Assets Available for Benefits	Percentage Covered by Net Assets			
						(1)	(2)	(3)	(4)
1987	2202.2	31.6	494.0	836.4	1874.3	85.1	0.	0.	0.
1988	2017.7	34.6	539.1	1,253.8	2019.8	100.	6.1	0.	0.
1989	2164.7	23.8	574.3	1,259.1	2173.4	100.	100.	36.6	0.
1990	2088.0	20.2	615.4	1,486.4	2321.2	100.	100.	34.6	0.
1991	2155.5	17.9	674.2	1,651.6	2516.7	100.	100.	50.9	0.

*Actuarial Present Value of Credited Projected Benefits were calculated beginning with the June 30, 1987 Actuarial Valuation in accordance with The National Council on Governmental Accounting Standard No. 6. Prior to 1987, "Entry Age Normal" accrued benefits were calculated but are not illustrated.

EXHIBIT 3 (Continued)**Pension Accounting & Financial Disclosure****HALL ACTUARIAL ASSOCIATES****STATISTICAL DATA****COMPARATIVE SUMMARY OF REVENUES BY SOURCE
AND EXPENSES BY TYPE**

Revenues by Source				
<u>Fiscal Year</u>	<u>Members Contribution</u>	<u>Employer Contribution</u>	<u>Investment Income</u>	<u>Total</u>
1982	73,668,846	98,544,098	103,770,854	275,983,798
1983	78,280,970	106,583,169	109,111,393	293,975,532
1984	81,484,685	107,174,862	115,686,648	304,346,195
1985	82,716,304	119,696,836	143,986,873	345,400,013
1986	83,300,765	124,935,186	183,191,469	391,427,420
1987	80,984,576	121,880,055	183,843,426	386,708,057
1988	81,197,631	125,430,030	160,911,687	375,065,821
1989	81,925,366	134,314,360	181,179,170	397,418,896
1990	92,339,927	99,536,184	206,633,219	398,509,330
1991	104,020,927	149,859,389	225,267,421	479,147,276

Expenses by Type				
<u>Fiscal Year</u>	<u>Benefits</u>	<u>Refunds</u>	<u>Administrative Expenses**</u>	<u>Total</u>
1982	106,182,317	15,476,069	1,237,916	122,896,302
1983	114,083,975	14,330,594	3,603,662	132,018,231
1984	131,705,715	17,514,050	1,488,420	150,708,185
1985*	163,504,275	17,844,634	5,392,375	186,741,284
1986	175,141,258	19,929,641	1,379,097	196,449,996
1987	202,019,494	24,736,748	1,482,591	226,756,242
1988	223,013,862	24,792,168	1,904,259	249,710,289
1989	228,603,084	32,548,038	2,267,848	263,418,970
1990	234,066,890	26,880,996	2,577,670	263,525,556
1991	240,622,226	22,955,119	3,145,390	266,722,735

*Beginning in 1985, expenses for professional investment advisory services are treated as an offset to Investment Income.

**Includes other expenses incurred not directly related to the administration of daily operation.

EXHIBIT 4

CENSUS DATA

GENERAL COMMENTS

The data contained in this valuation is summarized on the following pages with exceptions noted below. The profile depicted in the cellar graphs represents "error-free data," which serves as the basis for determining costs and liabilities. Active members are allocated to cells based upon attained age and years of service. Retirees and Survivors are allocated to cells based upon attained age and years elapsed since retirement or commencement of benefits.

The validity of the results of any actuarial valuation is dependent upon the accuracy of the data base. Prior to processing, suspicious data and data containing errors were purged from the data base and processed separately based on the following error types:

- missing sex code
- missing or invalid date of birth
- missing or invalid date of employment
- missing or invalid salary
- invalid retirement dates.

There were numerous records purged from the data base containing errors or categorized as suspicious data which is not necessarily significant. These records had the basic characteristic of a terminated non-vested participant which have balances of \$50 or less in their accumulated employee contribution account. Suspicious data are not necessarily errors, but data which falls outside the parameters of the editing process for further checking. There were 13,367 records for terminated non-vested members due a refund in excess of \$50. Finally, 392 terminated vested members and Reciprocal Recognition records were purged as data in error. These participants were assumed to possess the same characteristics as the participants with "good data" in the same cohort.

Salary data contained in the profiles and valuation report exceed the amount reported by internal audit due to salary annualization. In the valuation process, membership data with fractional service in the first year of employment annualizes the salary.

The following is a summary by plan of the data submitted for valuation:

	---1991---	---1990---
	<u>Census</u>	<u>Census</u>
Active Members	70,927	66,711
Regular Retirees	18,876	18,740
Disability Retirees	1,910	1,895
Survivors	3,951	3,863
Vested & Reciprocal	392	422
Due Refunds	13,367	14,044
DROP Participants	346	N/A
TOTAL	109,769	105,675

--- --- HALL ACTUARIAL ASSOCIATES --- ---

MEMBERSHIP PROFILE CATEGORIZED BY AGE AND YEARS EMPLOYED

STATE EMPLOYEES' SYSTEM
ACTIVE REGULAR MEMBERS

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total :
[0 - 19) :	506	20	0	0	0	0	0	0	0	526 :
:	5711081	270289	0	0	0	0	0	0	0	5981370 :
[20 - 24) :	1588	1687	35	0	0	0	0	0	0	3310 :
:	26011179	23424529	503985	0	0	0	0	0	0	49939694 :
[25 - 29) :	2316	3575	1376	315	0	0	0	0	0	7582 :
:	52966237	60528109	22466241	5717713	0	0	0	0	0	141678302 :
[30 - 34) :	2120	3139	2517	2706	157	1	0	0	0	10640 :
:	56561701	55245271	49740949	55665546	3451045	25949	0	0	0	220690462 :
[35 - 39) :	1982	2510	2187	3177	1758	89	0	0	0	11703 :
:	55050143	46329499	44782722	74082330	44174719	2232490	0	0	0	266651905 :
[40 - 44) :	1376	2157	1650	2263	2471	998	74	0	0	10989 :
:	34789738	40689897	34779675	52849139	67474169	26844275	2063759	0	0	259490656 :
[45 - 49) :	919	1260	1128	1435	1259	1051	673	16	0	7741 :
:	29062959	23409497	22304798	31651594	31524817	29851446	18517572	389335	0	186712022 :
[50 - 54) :	449	745	887	1171	983	740	743	143	8	5869 :
:	10897100	13448710	18046048	24907848	23108352	18464678	20941657	4436011	190502	134440908 :
[55 - 59) :	274	510	601	972	754	480	270	126	41	4028 :
:	7204322	9504570	12621298	21101401	16564956	11232544	7360490	3873236	1215758	90678579 :
[60 - 64) :	64	187	382	524	456	261	131	41	29	2075 :
:	6355552	3466272	7741419	11113928	10672066	6264128	3381119	1307875	920752	51223116 :
[65 - 69) :	14	5	91	136	135	54	31	19	12	497 :
:	1618576	94204	2066971	2946787	3347224	1405540	778812	479009	323255	13060381 :
[70 - 74) :	8	6	3	32	43	17	15	6	9	139 :
:	664684	134260	67053	669789	972554	473902	405746	150334	199147	3737473 :
Total :	11616	15801	10857	12731	8016	3691	1937	351	99	65099 :
:	286893280	276545111	215121162	280706080	201289907	96794957	53449156	10635801	2849415	1424284874 :

 HALL ACTUARIAL ASSOCIATES

 MEMBERSHIP PROFILE
 CATEGORIZED BY AGE AND YEARS EMPLOYED

 STATE EMPLOYEES' SYSTEM
 ACTIVE LEGISLATORS

 CELLS DEPICT - MEMBER COUNT
 TOTAL SALARY

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total :
[0 - 19) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
[20 - 24) :	0	1	0	0	0	0	0	0	0	1 :
:	0	29025	0	0	0	0	0	0	0	29025 :
[25 - 29) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
[30 - 34) :	0	4	1	0	0	0	0	0	0	5 :
:	0	100500	25900	0	0	0	0	0	0	126400 :
[35 - 39) :	1	2	4	2	0	0	0	0	0	9 :
:	16967	52800	104925	50625	0	0	0	0	0	225317 :
[40 - 44) :	0	4	6	5	3	1	0	0	0	19 :
:	0	106275	157425	136875	75450	24750	0	0	0	500775 :
[45 - 49) :	2	5	6	5	9	2	0	0	0	29 :
:	117500	129975	161550	131700	251700	49950	0	0	0	842375 :
[50 - 54) :	1	0	4	2	6	2	3	0	0	18 :
:	17500	0	118496	51225	171054	52125	78750	0	0	489150 :
[55 - 59) :	0	1	1	2	1	5	1	1	0	12 :
:	0	26550	25950	49575	25425	133514	27450	25425	0	313889 :
[60 - 64) :	0	1	0	0	2	0	3	3	0	9 :
:	0	26025	0	0	53550	0	79725	102654	0	261954 :
[65 - 69) :	0	0	0	0	1	0	2	1	0	4 :
:	0	0	0	0	23700	0	66133	25500	0	115333 :
[70 - 74) :	0	1	0	0	0	0	1	0	1	3 :
:	0	22525	0	0	0	0	27000	0	52500	102025 :
Total :	4	19	22	16	22	10	10	5	1	109 :
:	151967	493675	594246	420000	600879	260339	279058	153579	52500	3006243 :

HALL ACTUARIAL ASSOCIATES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

STATE EMPLOYEES' SYSTEM
ACTIVE JUDGES

CELLS DEPICT	-	MEMBER COUNT
		TOTAL SALARY

VALUATION DATE 6/30/91

Age/Years :	(0-1)	(1-5)	(5-10)	(10-15)	(15-20)	(20-25)	(25-30)	(30-35)	(35-)	Total
[0 - 19) :	0	0	0	0	0	0	0	0	0	0
:	0	0	0	0	0	0	0	0	0	0
[20 - 24) :	0	0	0	0	0	0	0	0	0	0
:	0	0	0	0	0	0	0	0	0	0
[25 - 29) :	0	0	0	0	0	0	0	0	0	0
:	0	0	0	0	0	0	0	0	0	0
[30 - 34) :	3	2	1	0	0	0	0	0	0	0
:	224636	73605	37566	0	0	0	0	0	0	6
[35 - 39) :	19	9	5	3	0	0	0	0	0	335807
:	1443235	539532	303011	149947	0	0	0	0	0	36
[40 - 44) :	14	7	15	13	6	0	0	0	0	2435725
:	745043	418007	1058492	910607	465504	0	0	0	0	55
[45 - 49) :	9	8	17	22	8	0	0	0	0	3597653
:	642207	577525	1232834	1472143	568265	0	0	0	0	64
[50 - 54) :	0	4	5	12	12	7	5	0	0	4492975
:	0	257410	356079	886367	874977	565061	381732	0	0	45
[55 - 59) :	3	1	8	10	12	10	7	0	0	3321626
:	236889	38692	584298	720736	920226	718470	594206	0	0	51
[60 - 64) :	2	0	5	5	6	8	7	8	0	3813518
:	129625	0	392024	395939	465297	623796	482530	590551	0	41
[65 - 69) :	1	0	2	4	2	5	4	3	1	3079763
:	29615	0	124187	314440	155168	387920	314440	258094	77595	22
[70 - 74) :	0	0	0	0	1	0	0	0	2	1661459
:	0	0	0	0	81688	0	0	0	153737	3
Total :	51	31	58	69	47	30	23	11	3	323
:	3451253	1904771	4088491	4850179	3531127	2295247	1772908	848645	231332	22973955

HALL ACTUARIAL ASSOCIATES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED

STATE EMPLOYEES' SYSTEM
ACTIVE WILDLIFE AGENTS

CELLS DEPICT - MEMBER COUNT
TOTAL SALARY

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total :
[0 - 19) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
[20 - 24) :	5	3	0	0	0	0	0	0	0	8 :
:	74565	54380	0	0	0	0	0	0	0	128945 :
[25 - 29) :	10	7	3	0	0	0	0	0	0	20 :
:	180869	139446	64799	0	0	0	0	0	0	385114 :
[30 - 34) :	2	7	8	9	1	0	0	0	0	27 :
:	34891	119686	170160	209981	22721	0	0	0	0	557440 :
[35 - 39) :	2	4	9	17	7	0	0	0	0	39 :
:	35636	81787	187983	418069	200450	0	0	0	0	923926 :
[40 - 44) :	3	2	10	18	14	3	1	0	0	51 :
:	57242	40966	221997	418748	392825	89993	28193	0	0	1249965 :
[45 - 49) :	0	2	4	6	8	7	0	0	0	27 :
:	0	44364	87363	132156	207269	210763	0	0	0	681915 :
[50 - 54) :	0	0	2	3	4	5	2	0	0	16 :
:	0	0	41216	79203	108277	148405	64044	0	0	441145 :
[55 - 59) :	0	0	2	2	2	5	0	0	0	11 :
:	0	0	42282	47101	51015	148534	0	0	0	288932 :
[60 - 64) :	0	0	0	0	1	0	0	0	0	1 :
:	0	0	0	0	27073	0	0	0	0	27073 :
[65 - 69) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
[70 - 74) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
Total :	22	25	38	55	37	20	3	0	0	200 :
:	383206	480629	815800	1305259	1009630	597695	92237	0	0	4684459 :

HALL ACTUARIAL ASSOCIATES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS EMPLOYED
STATE EMPLOYEES' SYSTEM
CORRECTION - before 1986
CELLS DEPICT - MEMBER COUNT
TOTAL SALARY
VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total :
[0 - 19) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
[20 - 24) :	0	1	15	0	0	0	0	0	0	16 :
:	0	3444	251716	0	0	0	0	0	0	255160 :
[25 - 29) :	0	1	187	23	0	0	0	0	0	211 :
:	0	16501	3528193	534599	0	0	0	0	0	4079294 :
[30 - 34) :	0	1	219	171	11	0	0	0	0	402 :
:	0	19233	4303672	3968114	293613	0	0	0	0	8584633 :
[35 - 39) :	0	4	182	195	111	7	0	0	0	499 :
:	0	27534	3642690	4671247	2943919	238725	0	0	0	11524116 :
[40 - 44) :	0	2	162	141	115	26	1	1	0	448 :
:	0	40052	3174409	3445591	3285600	814297	25039	29689	0	10814677 :
[45 - 49) :	0	0	98	98	53	26	9	1	1	286 :
:	0	0	2031681	2344385	1382317	870649	283487	18414	29213	6960148 :
[50 - 54) :	0	1	80	68	25	12	5	0	0	191 :
:	0	20048	1613896	1583599	606732	345684	197655	0	0	4367614 :
[55 - 59) :	0	0	54	76	31	6	2	1	1	171 :
:	0	0	1034714	1764559	751297	147570	71712	28141	45428	3843422 :
[60 - 64) :	0	0	30	24	8	3	0	2	0	67 :
:	0	0	590397	547743	191639	94053	0	70326	0	1494159 :
[65 - 69) :	0	0	3	8	1	2	0	0	0	14 :
:	0	0	59854	169604	36229	60519	0	0	0	326206 :
[70 - 74) :	0	0	0	1	0	0	1	0	0	2 :
:	0	0	0	22073	0	0	36229	0	0	58302 :
Total :	0	10	1030	805	355	82	18	5	2	2307 :
:	0	126812	20231224	19051519	9491348	2571497	614122	146570	74641	52307735 :

CELLS DEPICT	- MEMBER COUNT	TOTAL SALARY
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

VALUATION DATE 6/30/91

[illegible]

HALL ACTUARIAL ASSOCIATES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFIT

STATE EMPLOYEES' SYSTEM
ALL REGULAR RETIREES

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total
[0 - 39) :	0	0	0	1	1	1	0	0	1	4
:	0	0	0	5120	17114	14864	0	0	2944	40044
[40 - 44) :	3	5	2	2	0	0	0	0	0	12
:	39937	62844	29385	21078	0	0	0	0	0	152244
[45 - 49) :	9	9	7	2	51	7	2	0	0	87
:	160443	124463	92262	30130	740267	77670	11679	0	0	1236918
[50 - 54) :	28	46	47	28	465	82	2	0	0	698
:	485106	927870	842200	501619	7342847	1256745	24915	0	0	11381306
[55 - 59) :	90	105	120	63	909	547	23	1	0	1858
:	1508078	1659231	1767660	1139632	12689276	8203876	285861	3621	0	27257240
[60 - 64) :	229	321	320	172	827	1174	273	18	2	3336
:	2502873	3042077	3257324	1980260	9689156	16687552	3653927	159092	5735	40978001
[65 - 69) :	145	202	277	188	632	2011	723	106	3	4287
:	1724611	1912068	2481887	1783599	6369314	21909442	9237807	1233214	18196	46670142
[70 - 74) :	29	40	65	52	191	1487	1511	286	5	3666
:	562045	348995	713805	764976	2185931	14517237	13788696	3271453	20366	36173509
[75 - 79) :	1	1	1	4	12	312	1320	861	55	2567
:	16264	5610	19511	48379	118181	3366043	10045002	6622347	493016	20734356
[80 - 84) :	0	0	1	0	0	10	112	1171	266	1560
:	0	0	20603	0	0	134149	1082776	7725468	1478191	10441190
[85 - 89) :	0	0	0	0	1	1	9	141	444	596
:	0	0	0	0	18425	34974	55983	1083954	2289319	3483657
[90 - 99) :	0	1	0	0	0	0	0	10	194	205
:	0	7878	0	0	0	0	0	104138	922881	1034898
Total :	534	730	840	512	3089	5632	3975	2594	970	18876
:	6999360	8091038	9223642	6274796	39170516	66202560	38187650	20203292	5230652	199583510

HALL ACTUARIAL ASSOCIATES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIREDSTATE EMPLOYEES' SYSTEM
ALL REGULAR RETIREESCELLS DEPICT - MEMBER COUNT
TOTAL BENEFIT

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total :
[0 - 39) :	0	0	0	0	0	0	0	0	1	1 :
:	0	0	0	0	0	0	0	0	2944	2944 :
[40 - 44) :	2	3	1	1	0	0	0	0	0	7 :
:	27555	34733	15044	10464	0	0	0	0	0	87797 :
[45 - 49) :	1	5	4	1	32	4	2	0	0	49 :
:	12132	63987	52582	16010	476302	42105	11679	0	0	674800 :
[50 - 54) :	15	23	24	12	281	41	2	0	0	398 :
:	247176	460392	412735	189004	4331162	604465	24915	0	0	6269853 :
[55 - 59) :	46	58	80	39	609	290	10	1	0	1133 :
:	714722	825191	1048264	610764	7838207	3844660	112627	3621	0	14998060 :
[60 - 64) :	137	222	226	124	573	701	157	10	0	2150 :
:	1293811	2010957	2128835	1152853	5920379	8876419	1981219	79349	0	23443824 :
[65 - 69) :	79	122	192	121	428	1339	416	76	1	2774 :
:	662010	1050680	1443006	882937	4026615	12722649	5023740	823197	5839	26640675 :
[70 - 74) :	13	20	44	27	109	904	1056	179	3	2355 :
:	119723	181365	468761	286569	1105987	8013948	8695908	2036203	8195	20916662 :
[75 - 79) :	1	0	0	3	9	190	882	668	48	1801 :
:	16264	0	0	31656	88205	1869034	6374125	4881854	434535	13695676 :
[80 - 84) :	0	0	1	0	0	3	81	892	240	1217 :
:	0	0	20603	0	0	52268	685420	5643313	1288307	7689913 :
[85 - 89) :	0	0	0	0	1	0	6	118	403	528 :
:	0	0	0	0	18425	0	35151	850373	2019526	2923476 :
[90 - 99) :	0	1	0	0	0	0	0	9	177	187 :
:	0	7878	0	0	0	0	0	87149	841819	936847 :
Total :	294	454	572	328	2042	3472	2612	1953	873	12600 :
:	3093396	4635186	5589834	3180260	23805283	36025550	22944789	14405063	4601167	118280532 :

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED
CELLS DEPICT - MEMBER COUNT
TOTAL BENEFIT

STATE EMPLOYEES' SYSTEM
ALL DISABILITY BENEFITS
VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-2]	[2-3]	[3-4]	[4-5]	[5-10]	[10-15]	[15-20]	[20-)	Total
[0 - 39]	12	10	9	6	8	7	0	0	0	52
[40 - 44]	16	9	17	5	6	21	1	0	0	76
[45 - 49]	17	28	26	22	14	56	10	2	0	175
[50 - 54]	34	35	37	23	29	70	27	6	1	262
[55 - 59]	36	26	35	28	25	147	54	14	3	368
[60 - 64]	1	7	15	15	28	1208158	285982	75227	15078	2698421
[65 - 69]	0	0	0	1	4	105	141	64	16	331
[70 - 74]	0	0	0	0	0	11	81	73	15	180
[75 - 79]	0	0	0	0	0	1	5	35	31	72
[80 - 84]	0	0	0	0	0	0	0	3	17	20
[85 - 89]	0	0	0	0	0	0	0	0	8	8
[90 - 99]	0	0	0	0	0	0	0	0	0	0
Total	116	115	139	100	114	570	432	227	97	1910
	934448	821040	953691	678217	807498	4305290	2676522	1111689	366833	12655232

--- --- HALL ACTUARIAL ASSOCIATES --- ---

MEMBERSHIP PROFILE CATEGORIZED BY AGE AND YEARS RETIRED

STATE EMPLOYEES' SYSTEM
ALL DISABILITY BENEFITS

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFIT

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total :
[0 - 39) :	4	1	1	1	0	1	0	0	0	8 :
:	17023	6830	3658	3888	0	3191	0	0	0	34592 :
[40 - 44) :	4	1	2	1	2	3	0	0	0	13 :
:	27236	13611	18747	5531	14624	13430	0	0	0	93180 :
[45 - 49) :	3	10	7	4	3	17	6	2	0	52 :
:	27689	71056	55742	21385	19718	124599	32372	6666	0	359230 :
[50 - 54) :	5	8	2	4	7	24	9	1	0	60 :
:	34884	60958	16425	24069	61883	192588	56581	3467	0	450858 :
[55 - 59) :	10	2	4	8	6	45	15	1	0	91 :
:	139692	15657	21106	102755	49176	433162	106386	3273	0	871210 :
[60 - 64) :	0	2	0	5	9	55	33	8	0	112 :
:	0	12244	0	25240	59121	455238	255572	46759	0	854176 :
[65 - 69) :	0	0	0	1	0	26	46	15	3	91 :
:	0	0	0	5489	0	205690	279442	93234	14713	598571 :
[70 - 74) :	0	0	0	0	0	5	19	13	3	40 :
:	0	0	0	0	0	59341	115196	60094	11427	246060 :
[75 - 79) :	0	0	0	0	0	0	1	4	1	6 :
:	0	0	0	0	0	0	3397	15943	3010	22350 :
[80 - 84) :	0	0	0	0	0	0	0	2	4	6 :
:	0	0	0	0	0	0	0	4867	12346	17214 :
[85 - 89) :	0	0	0	0	0	0	0	0	3	3 :
:	0	0	0	0	0	0	0	0	12852	12852 :
[90 - 99) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
Total :	26	24	16	24	27	176	129	46	14	482 :
:	246526	180358	115679	188359	204523	1487243	848949	234306	54350	3560298 :

--- --- HALL ACTUARIAL ASSOCIATES --- ---

MEMBERSHIP PROFILE CATEGORIZED BY AGE AND YEARS RETIRED

STATE EMPLOYEES' SYSTEM
ALL SURVIVOR BENEFITS

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFIT

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-2)	[2-3)	[3-4)	[4-5)	[5-10)	[10-15)	[15-20)	[20-)	Total :
[0 - 39) :	19	10	12	14	12	47	10	11	5	140 :
:	277924	172880	147950	146275	134428	489062	76656	80055	15281	1540514 :
[40 - 44) :	1	2	6	12	8	28	9	2	1	69 :
:	10828	27417	92387	165842	100613	322496	57813	9011	1580	787991 :
[45 - 49) :	5	5	14	11	11	42	15	8	0	111 :
:	44034	125107	164776	119054	127837	441343	126004	45191	0	1193350 :
[50 - 54) :	10	16	14	9	22	67	43	13	4	198 :
:	117813	230108	169393	104856	230336	668597	301741	71744	9406	1903997 :
[55 - 59) :	8	10	10	12	24	112	76	28	7	287 :
:	91431	144997	125505	151127	240979	948116	493700	135557	20166	2351581 :
[60 - 64) :	4	8	11	13	19	153	172	76	13	469 :
:	35578	86984	79235	121580	178946	1324595	1103561	405467	39737	3375686 :
[65 - 69) :	2	4	6	14	27	171	233	144	25	626 :
:	16413	18494	73523	183760	239708	1533108	1545207	776232	102802	4489249 :
[70 - 74) :	1	2	2	3	7	92	280	261	72	720 :
:	36480	16582	17042	19674	46466	766978	1737353	1374035	272347	4286960 :
[75 - 79) :	1	0	1	0	0	24	170	317	138	651 :
:	35188	0	3216	0	0	187379	1085197	1643441	553734	3508157 :
[80 - 84) :	0	0	1	0	1	5	48	165	187	407 :
:	0	0	5475	0	12008	29694	236088	897028	753972	1934267 :
[85 - 89) :	0	0	0	0	0	0	8	32	163	203 :
:	0	0	0	0	0	0	45873	147163	631065	824101 :
[90 - 99) :	0	0	0	0	0	0	2	11	57	70 :
:	0	0	0	0	0	0	7545	55671	226406	289623 :
Total :	51	57	77	88	131	741	1066	1068	672	3951 :
:	665691	822571	878505	1012173	1311324	6711373	6816741	5640601	2626500	26485482 :

HALL ACTUARIAL ASSOCIATES

MEMBERSHIP PROFILE
CATEGORIZED BY AGE AND YEARS RETIRED

STATE EMPLOYEES' SYSTEM
DROP PARTICIPANTS

CELLS DEPICT	- MEMBER COUNT	TOTAL BENEFIT
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

VALUATION DATE 6/30/91

[illegible]

--- --- HALL ACTUARIAL ASSOCIATES --- ---

MEMBERSHIP PROFILE CATEGORIZED BY AGE AND YEARS EMPLOYED

STATE EMPLOYEES' SYSTEM
TERMINATED VESTED

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFIT

VALUATION DATE 6/30/91

Age/Years :	(0-1)	[1-5)	[5-10)	[10-15)	[15-20)	[20-25)	[25-30)	[30-35)	[35-)	Total :
[0 - 19) :	0	0	0	0	0	0	0	0	0	0 :
:	0	0	0	0	0	0	0	0	0	0 :
[20 - 24) :	0	0	0	0	1	0	0	0	0	1 :
:	0	0	0	0	2950	0	0	0	0	2950 :
[25 - 29) :	0	1	1	1	0	0	0	0	0	3 :
:	0	429	3069	4269	0	0	0	0	0	7768 :
[30 - 34) :	0	0	3	6	1	0	0	0	0	10 :
:	0	0	3181	30478	5594	0	0	0	0	39254 :
[35 - 39) :	0	3	2	10	18	2	0	0	0	35 :
:	0	2796	1472	52962	122562	6543	0	0	0	186337 :
[40 - 44) :	0	3	3	14	44	16	3	0	0	83 :
:	0	1525	7660	90012	310576	116046	15214	0	0	541036 :
[45 - 49) :	0	0	1	10	22	20	7	1	0	61 :
:	0	0	4031	85950	193920	186007	36060	7212	0	513182 :
[50 - 54) :	0	1	0	15	26	22	18	6	0	88 :
:	0	702	0	92094	220810	196954	172607	34629	0	717799 :
[55 - 59) :	0	0	0	10	18	11	12	8	4	63 :
:	0	0	0	53605	92570	81154	87480	48260	15884	378956 :
[60 - 64) :	0	0	0	2	4	2	4	2	4	18 :
:	0	0	0	5937	20806	24374	22991	7897	15486	97493 :
[65 - 69) :	0	0	0	1	1	4	3	0	3	12 :
:	0	0	0	5608	3768	15118	12687	0	16958	54141 :
[70 - 74) :	0	0	0	0	0	4	5	4	5	18 :
:	0	0	0	0	0	21881	18318	16453	20214	76867 :
Total :	0	8	10	69	135	81	52	21	16	392 :
:	0	5453	19415	420919	973561	648080	365359	114454	68543	2615788 :

HALL ACTUARIAL ASSOCIATES

EXHIBIT 5**PRINCIPLE PROVISIONS OF THE PLAN**
(Including Acts of 1990 Regular Session)**EFFECTIVE DATE:**

July 1, 1947; last amendment date - July 1, 1990

EMPLOYEE:

Any person legally occupying a position in the state service.

EMPLOYER:

The State of Louisiana or any of its boards, commissions, departments, agencies and courts which are contributing members and those approved for membership by the board from which any employee receives his compensation.

ELIGIBILITY FOR PARTICIPATION:

Conditions of employment in state service except the following: elected or appointed officials or employees who are contributing members of any other state system; public officials and state employees who receive a per diem in lieu of compensation; persons employed prior to 1/1/73 who work on a part-time basis and elect not to participate; patient or inmate help in state charitable, penal or correctional institutions; part-time students, interns and resident physicians; independent contractors; employees who are age 60 or older at time of employment; retirees of the retirement system who return to work under certain conditions; judges who failed to elect membership prior to 10/2/76; civilian employees who on 11/1/81 were within five years of retirement eligibility in the Federal Civil Service Retirement and Disability Fund; teachers employed after 9/10/82; nurses employed from employment pools at state charity hospitals.

SERVICE:

Service as an "Employee", defined above.

CREDITABLE SERVICE:

For service prior to January 1, 1973: 1/4 year granted for each 89 day interval of service, not to exceed 1 credit per fiscal year. Minimum 50 days required for 1st Quarter credit.

For service on or after January 1, 1973, a member shall receive credit based on the ratio of actual pay to the annual base per fiscal year. Fractional service shall be rounded to the next highest 1/10th, not to exceed 100 percent per year.

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

ADDITIONAL
CREDITABLE SERVICE:

1. Credit for service cancelled by withdrawal of accumulated contributions may be restored by member by paying into system the amount withdrawn plus regular interest.
2. Maximum of 4 years of credit for military service may be obtained for each member with at least 2 years service, contingent on payment of Employer and Employee contributions plus compound interest on compensation member would have received for such period.
3. Credit for educational leave or any period of training, up to a maximum of three years, for which a stipend was paid and the member was bound to return to the employ and does return to the employ of such agency.
4. Credit for service which was classified as a job appointment or emergency appointment not to exceed 2 years credit.
5. At retirement, all accumulated unused sick and annual leave shall be credited based on the following schedule:

1 - 26 Days	10% of a Year
27 - 52 Days	20% of a Year
53 - 78 Days	30% of a Year
79 - 104 Days	40% of a Year
105 - 130 Days	50% of a Year
131 - 156 Days	60% of a Year
157 - 182 Days	70% of a Year
183 - 208 Days	80% of a Year
209 - 234 Days	90% of a Year
235 - 260 Days	100% of a Year

EARNABLE COMPENSATION:

The base pay earned by an employee for a given pay period as reported by the employing agency including the full amount earned, expense allowances, per diem paid to members of the legislature, the clerk or sergeant-at-arms of the house and the president and secretary of the senate.

AVERAGE FINAL
COMPENSATION FOR
BENEFIT PURPOSES:

The average annual earned compensation for the thirty-six highest months of successive employment, or the highest thirty-six successive joined months where interruption of service occurred; part-time employees use the base pay the part-time employee would have received had employment been full-time.

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

ACCUMULATED CONTRIBUTIONS:

The sum of all amounts deducted from the earned compensation of a member and credited to the individual account in the employee's savings account, together with regular interest credited prior to July 1969.

EMPLOYEE CONTRIBUTIONS:

		<u>After June 30, 1989</u>
Individual Employees	7% of Compensation	7.5%
Agents of DOC	8.5% of Compensation	9.0%
Wild Life Agents	8% of Compensation	8.5%
Legislators, Judges	11% of Compensation	11.5%

EMPLOYER CONTRIBUTIONS:

9% of Compensation by statute; 9.2% effective 8/1/80; 10.2% effective 7/1/84; 11.2% effective 9/11/85. Act 81 of 1988 requires employer rate to be actuarially determined and set annually.

RETIREMENT BENEFIT:

NORMAL RETIREMENT:

Eligibility:

- Written application to the Board and,
1. Member has attained age 60 and 10 years of accredited service, or age 55 and 25 years of accredited service, or at any age and 30 years of accredited service.
 2. Certain members of the Department of Public Safety and Corrections, 20 years of accredited service at any age (age 50 if employed after August 15, 1986, regardless of service).
 3. Service as a judge or court officer, 18 years of creditable service regardless of age, or age 50 and 20 years of accredited service, or age 55 and 12 years of accredited service, or age 70 without regard to accredited service.
 4. Members of the legislature, governor, lieutenant governor and state treasurer, 16 years of such service without regard to age, or age 50 with 20 years of accredited service with 12 years of such service, or age 55 with 12 years of such service.

Benefit:

1. Annual pension equal to 2 1/2 percent of average compensation for each year of creditable service, plus \$300 supplemental benefit.
2. Annual pension equal to 2 1/2 percent of average compensation for each year of creditable service, plus \$300 supplemental benefit.

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

3. Annual pension equal to 3 1/2 percent of average compensation for each year of creditable service as a judge or court officer, plus benefit described in (1) above for other state service.
4. Annual pension equal to 3 1/2 percent of average compensation for each year of creditable service as a legislator, governor, lieutenant governor or state treasurer, plus benefit described in (1) above for other state service.

NOTE:

- A. Benefit not to exceed 100% of average earnable compensation.
- B. Retiree who returns to work shall have benefits suspended while so re-employed; benefit in same amount shall resume after re-employment ceases, but shall include any Cost-of-Living benefits or increases granted during suspension (these are not retroactive). Retirees who return to work during a July 1 to June 30 year will not have his benefits reduced if his compensation does not exceed 50% of his average final compensation.
- C. The \$300 annual supplemental benefit is discontinued to persons who become members of the retirement system after 6/30/86 (Act 608 of 1986).
- D. For members employed after January 1, 1990, the annual pension cannot exceed the maximum benefit provided under Section 415(b)(2)(F) of the Internal Revenue Service Code as adjusted for inflation and form of benefit other than life annuity or qualified joint and survivor annuity for retirement ages as follows:

<u>AGE</u>	<u>MAXIMUM</u>	<u>AGE</u>	<u>MAXIMUM</u>	<u>AGE</u>	<u>MAXIMUM</u>
48	\$20,052	56	\$42,319	64	\$ 97,293
49	21,945	57	46,689	65	108,963
50	24,035	58	51,583	66	119,353
51	26,347	59	57,076	67	131,095
52	28,906	60	63,257	68	144,420
53	31,745	61	70,231	69	159,618
54	34,898	62	78,124	70	177,018
55	38,406	63	87,085		

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

COST-OF-LIVING BENEFITS:

1. Discretionary Board approved supplemental cost-of-living adjustments based on the difference in the all-items Consumer Price Index for the two immediate preceding calendar years not to exceed 3% in any year, from excess interest earnings, provided the system is approaching full funding.

2. Under Act 798 of 1980:

A. Cost-of-living adjustments for retirees based on their date of retirement as follows:

<u>Retirement Date</u>	<u>Increase</u>
7/2/78 - 7/1/79	3%
7/2/77 - 7/1/78	6%
7/1/77 and earlier	9% (of 10/1/77 benefit)

B. 1979 cost-of-living raise of 10% for those who retired on or before 7/1/80 is a permanent raise.

3. Under Act 852 of 1981:

Cost-of-living for recipients who retired on or before July 1, 1978, payable on January 1, 1982 as follows:

Retiree, beneficiary or survivor

1. At least 62 but less than 65, 4% of benefit of October 1, 1977, or initial benefit if retired after October 1, 1977, but not greater than \$400 annually,

2. 65 or older 7% of benefit of October 1, 1977 or initial benefit if retired after October 1, 1977, but not greater than \$700 annually.

3. Disability retirees and surviving children not subject to the above age restrictions, and their COL is 7%, but not greater than \$700 per person.

4. Under Act 443 of 1984:

7% Cost-of-living increase to retirees, beneficiaries and survivors who are receiving a benefit by 9/1/84. It is effective 9/1/84 and must be paid by the retirement system by 11/1/84.

No increase can be more than \$100/month. If the increase is only partially funded for a given year, the increase shall be reduced in direct proportion.

NOTE:

In no case may the increase cause annual benefits to exceed \$24,000.

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

DISABILITY RETIREMENT:

Eligibility:

10 years of creditable service; certification of disability by medical board (medical examination may be required once in every year for the first 5 years of disability retirement, and once in every 2 years thereafter, until age 60.)

Benefit:

- 1) The disability retirement annuity shall be equivalent to the regular retirement formula without reduction by reason of age for all classes of membership.
- 2) For judges and court officers, the benefit in (1) but not less than 50% of current salary.
- 3) For certain Wild Life agents; partial disabilities not eligible for (1) above receive 75% of the benefit in (1); total disability in-line-of-duty receive 60% of average compensation.

SURVIVOR'S BENEFITS:

Eligibility:

1. Surviving spouse with minor children, legally married two years prior to date of death of a member with 10 years of service credit, 2 of which were earned immediately prior to death, or 20 years of service regardless of date earned.
2. Surviving spouse of a deceased member with 5 years of service credit, 2 of which were earned immediately prior to death, or 20 years of service regardless of date earned.
3. Surviving minor child, with no spouse of a deceased member with 5 years of service credit, 2 of which were earned immediately prior to death, or 20 years of service regardless of date earned.
4. Surviving handicapped or mentally retarded children.
5. Surviving spouse of a judge or court officer.
6. Beneficiary not eligible for (1), (2), (3), (4) or (5).

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

Benefit:

1. Greater of 75% of member's average compensation or \$300 per month. One-third of the benefit is designated for survivor, two-thirds for minor children.
2. Greater of 50% of member's average compensation or \$200 per month.
3. Greater of 75% of member's average compensation or \$300 per month.
4. Continuation of minor child's benefit described above in (1) or (2) whichever is applicable.
5. Survivor's benefit described in (1) or (2), but not less than the greater of 1/3 the member's compensation or 50% of the retirement pay which such member was entitled or receiving prior to death.
6. Return of member's accumulated contributions.

OPTIONAL FORMS
OF BENEFIT:

In lieu of receiving normal retirement benefit, member may elect to receive actuarial equivalent of retirement allowance in a reduced form as follows:

Option 1 - If a member dies before receiving present value of annuity in monthly payments, balance paid to designated beneficiary.

Option 2 - Reduced retirement allowance, if member dies, to be continued to designated beneficiary for his lifetime.

Option 3 - 1/2 of reduced retirement allowance, if member dies, to be continued to designated beneficiary for his lifetime.

Option 4 - Other benefits of equal actuarial value may be elected with approval of board.

- A. 90% of the maximum retirement allowance to member; if member dies, 55% of the maximum retirement allowance continued to beneficiary.
- B. 90% of the maximum retirement allowance to member; if member dies, 55% of the maximum retirement allowance continues to beneficiary adjusted based on the age and relationship of the beneficiary to the member.
- C. Special reversionary annuities to Options 2, 3, and 4. Member's reduced benefit reverts to the maximum if the beneficiary predeceases the annuitant.

EXHIBIT 5 (Continued)
Principle Provisions

HALL ACTUARIAL ASSOCIATES

REFUND OF CONTRIBUTIONS:

If a member ceases to be a member, except by death or retirement, he shall be paid such part of the amount of the accumulated contributions credited to his individual account in annuity savings fund as he shall demand, plus any accumulated interest thereon as of 6/30/71; if member of legislature, no interest. No interest credited after 6/30/71. Death prior to retirement - accumulated contributions credited to individual account in annuity savings fund are returnable to designated beneficiary, if any; otherwise, to his estate.

WITHDRAWAL AFTER 10 YEARS
OF CREDITABLE SERVICE:

Any member with credit for 10 years of service who withdraws from service may elect to leave accumulated contributions in system until age 60, when he may apply for retirement and begin receiving a retirement benefit based on the credits he had at date of withdrawal.

EXHIBIT 6

ACTUARIAL COST METHODS AND ASSUMPTIONS

COST METHOD:

The individual "Projected Unit Credit" cost method was used to calculate the funding requirements of the retirement system. Under this cost method, the actuarial present value of projected benefits of each individual included in the valuation is accumulated from the participant's attained age to the anticipated retirement dates. That portion of the actuarial present value attributable to current year benefit accruals is called the Normal Cost. The actuarial present value of future benefits in proportion to service accrued on the date of valuation is called the actuarial accrued liability.

ACCOUNTING DISCLOSURE:

The Governmental Accounting Standards Board Statement No. 5 requires the disclosure of "Credited Projected Benefits" for Public Employee Retirement Systems. The actuarial present value of credited projected benefits are the accumulated accrued benefits of each individual participant projected with salary increases for active members to anticipated retirement. The development of this disclosure utilizes the same actuarial assumptions in the development of funding requirements and actuarial accrued liabilities.

MORTALITY ASSUMPTIONS:

Pre-retirement deaths and post-retirement life expectancies were projected in accordance with the experience of the 1983 Sex Distinct Graduated Group Annuity Mortality Table, with female age set at attained age plus one.

DISABILITY ASSUMPTION:

Rates of total and permanent disability were projected by age in accordance with the 1981-86 disability experience study of the Retirement System. For mortality after disability, rates were on the Eleventh Actuarial Valuation of the Railroad Retirement Systems for permanent disabilities.

RETIREMENT ASSUMPTION:

Retirement without reduction in benefits can occur at any given age after satisfying the service eligibility requirements. Absent from the plan is a traditional "Normal Retirement Age". Since the age and service requirements are varied, the frequency of retirements will depend on the exposure plus intangibles such as health, economy, Social Security and other work patterns. The retirement rates were projected based on the 1981-86 experience study of the Retirement System.

EXHIBIT 6 (Continued)
Cost Methods & Assumptions

HALL ACTUARIAL ASSOCIATES

TERMINATION ASSUMPTIONS:

Voluntary termination or withdrawal rates were derived from the 1981-86 termination experience study of the Retirement System. During the first five years of employment, the probability of voluntarily terminating is a multiple of the attained age rate as follows:

	<u>Regular Members</u>	<u>Corrections & Wildlife</u>
1st year	1.3x	1.6x
2nd year	1.0x	1.2x
3rd year	1.0x	1.1x
4th year	1.0x	1.1x
5th year	1.0x	1.0x

Furthermore, for members terminating with ten (10) or more years of service, it is assumed that 80% will not withdraw their accumulated employee contributions.

SALARY GROWTH:

The rate of annual salary growth is based on the 1981-86 salary growth experience study of the Retirement System.

FAMILY STATISTICS:

The composition of the Family was based on Age-Specific Fertility Rates from the 1983 Vital Statistics of the United States. 80% of the membership was assumed to be married with the wife assumed to be three (3) years younger than the husband. Sample rates are as follows:

<u>Age at Death</u>	<u>Number of Minor Chn.</u>	<u>Years for Youngest Child to Attain Majority</u>
25	1.3	17
30	1.8	15
35	2.2	13
40	2.1	10
45	1.7	8
50	1.2	4

REMARRIAGE:

Annuities payable to the spouse which cease upon death or remarriage were taken from "A Technical Note for the Construction of Widow's Annuities." The Remarriage and Mortality rates used to develop these annuities were based on the graduated rates from "Mortality and Remarriage Experience for Widow's Beneficiaries under OASDI."

EXHIBIT 6 (Continued)
Cost Methods & Assumptions

HALL ACTUARIAL ASSOCIATES

ASSUMPTION FOR INCOMPLETE DATA:

Records identified as containing suspicious data or errors in data were assumed to possess the same characteristics of "good data" in the same cohort.

INVESTMENT EARNINGS:

An effective annual rate of 8 1/4%, net expenses.

ASSET VALUATION:

Bonds are valued at amortized cost. Fixed assets are valued at cost minus depreciation. For the Plan Year Ending June 30, 1988 equities are valued on a four year weighted average. The computation of the average actuarial value of assets is the sum of the bonds at amortized cost, plus a weighted average of the change in the unrealized losses or (gains) in the market value of equities offset against the market value of equities. This value is a modification of the average value methodology determined in accordance with Reg. 1.412(c)(2)-1-(6)&(7) of the Internal Revenue Service Code and is subject to the Corridor Limits defined therein. The four year average value will be phased in over the next three year period.

ADMINISTRATIVE EXPENSES:

These expenses are included in Normal Cost and are assumed to be \$2,700,000 per year. Investment Expenses are not included in Normal Cost but are treated as a direct offset to investment income.

HALL ACTUARIAL ASSOCIATES

ACTUARIAL TABLES AND RATES
(STATE EMPLOYEES' ASSUMPTIONS)

Age	- Death Rates - Male	- Death Rates - Female	Remarriage Rates	Disability Rates	Retirement Rates	Dur	Termination Rates	Salary Scale
20	.00041	.00022	.09350	.00000	.00000	1	.27500	1.11750
21	.00043	.00023	.09151	.00000	.00000	2	.32400	1.10750
22	.00045	.00024	.08954	.00000	.00000	3	.16400	1.09750
23	.00047	.00026	.08756	.00000	.00000	4	.13700	1.08250
24	.00049	.00028	.08568	.00000	.00000	5	.11800	1.07750
25	.00051	.00029	.08402	.00000	.00000	6	.11000	1.07250
26	.00054	.00031	.08225	.00000	.00000	7	.10100	1.07050
27	.00056	.00033	.08027	.00000	.00000	8	.08500	1.06850
28	.00060	.00035	.07802	.00000	.00000	9	.07100	1.06650
29	.00063	.00038	.07555	.00000	.00000	10	.05800	1.06350
30	.00067	.00040	.07281	.00020	.00000	11	.03200	1.06050
31	.00071	.00043	.06976	.00020	.00000	12	.02400	1.05750
32	.00076	.00046	.06651	.00030	.00000	13	.02000	1.05450
33	.00081	.00049	.06308	.00030	.00000	14	.02000	1.05150
34	.00087	.00052	.05945	.00040	.00000	15	.01700	1.04850
35	.00095	.00055	.05581	.00050	.00000	16	.01700	1.04550
36	.00100	.00059	.05230	.00060	.00000	17	.01300	1.04250
37	.00107	.00063	.04890	.00080	.00000	18	.01300	1.04250
38	.00115	.00068	.04569	.00100	.00000	19	.01300	1.04250
39	.00125	.00073	.04271	.00120	.00000	20	.01300	1.04250
40	.00137	.00079	.03992	.00130	.50000	21	.01200	1.04250
41	.00152	.00086	.03769	.00140	.50000	22	.01200	1.04250
42	.00169	.00093	.03479	.00150	.50000	23	.01200	1.04250
43	.00190	.00102	.03255	.00170	.50000	24	.01200	1.04250
44	.00214	.00112	.03037	.00200	.65000	25	.01100	1.04250
45	.00242	.00124	.02821	.00240	.65000	26	.01100	1.04250
46	.00274	.00137	.02631	.00280	.32000	27	.00800	1.04250
47	.00310	.00151	.02455	.00320	.32000	28	.00700	1.04250
48	.00348	.00167	.02302	.00360	.42000	29	.00600	1.04250
49	.00390	.00183	.02154	.00450	.43000	30	.01400	1.04250
50	.00434	.00199	.02018	.00540	.43000	31	.01300	1.04250
51	.00480	.00216	.01888	.00670	.42000	32	.01300	1.04250
52	.00528	.00235	.01807	.00800	.42000	33	.02000	1.04250
53	.00577	.00257	.01733	.00670	.42000	34	.01500	1.04250
54	.00628	.00282	.01670	.00540	.42000	35	.01500	1.04250
55	.00681	.00311	.01622	.00670	.47000	36	.01500	1.04250
56	.00735	.00344	.01595	.00920	.34000	37	.01500	1.04250
57	.00793	.00382	.01584	.01040	.32000	38	.01500	1.04250
58	.00857	.00424	.01588	.01140	.32000	39	.00000	1.04350
59	.00931	.00471	.01621	.01040	.32000	40	.00000	1.04550
60	.01017	.00522	.01682	.00400	.32000	41	.00000	1.04850
61	.01118	.00578	.01764	.00330	.27000	42	.00000	1.05150
62	.01236	.00640	.01905	.00250	.27000	43	.00000	1.05450
63	.01376	.00709	.02061	.00250	.27000	44	.00000	1.05750
64	.01540	.00784	.02238	.00300	.27000	45	.00000	1.05750
65	.01732	.00868	.02446	.00400	.44000	46	.00000	1.05750
66	.01953	.00964	.02683	.00000	.32000	47	.00000	1.05750
67	.02200	.01077	.02951	.00000	.32000	48	.00000	1.05750
68	.02469	.01213	.03208	.00000	.32000	49	.00000	1.05750
69	.02757	.01376	.03504	.00000	.42000	50	.00000	1.05750
70	.03058	.01560	.03851	.00000	.50000	51	.00000	1.05750

HALL ACTUARIAL ASSOCIATES
ACTUARIAL TABLES AND RATES
(JUDGES & LEGISLATORS ASSUMPTIONS)

Age	- Death Rates - Male	- Death Rates - Female	Remarriage Rates	Disability Rates	Retirement Rates	Dur	Termination Rates	Salary Scale
20	.00041	.00022	.09350	.00000	.00000	1	.27500	1.04750
21	.00043	.00023	.09151	.00000	.00000	2	.32400	1.04750
22	.00045	.00024	.08954	.00000	.00000	3	.16400	1.04750
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41	.00152	.00086	.03769	.00140	.50000	22	.01200	1.04750
42	.00169	.00093	.03479	.00150	.50000	23	.01200	1.04750
43	.00190	.00102	.03255	.00170	.50000	24	.01200	1.04750
44	.00214	.00112	.03037	.00200	.65000	25	.01100	1.04750
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55	.00681	.00311	.01622	.00670	.47000	36	.01500	1.04750
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57	.00793	.00382	.01584	.01040	.32000	38	.01500	1.04750
58	.00857	.00424	.01588	.01140	.32000	39	.00000	1.04750
59	.00931	.00471	.01621	.01040	.32000	40	.00000	1.04750
60	.01017	.00522	.01682	.00400	.32000	41	.00000	1.04750
61	.01118	.00578	.01764	.00330	.27000	42	.00000	1.04750
62	.01236	.00640	.01905	.00250	.27000	43	.00000	1.04750
63	.01376	.00709	.02061	.00250	.27000	44	.00000	1.04750
64	.01540	.00784	.02238	.00300	.27000	45	.00000	1.04750
65	.01732	.00868	.02446	.00400	.44000	46	.00000	1.04750
66	.01953	.00964	.02683	.00000	.32000	47	.00000	1.04750
67	.02200	.01077	.02951	.00000	.32000	48	.00000	1.04750
68	.02469	.01213	.03208	.00000	.32000	49	.00000	1.04750
69	.02757	.01376	.03504	.00000	.42000	50	.00000	1.04750
70	.03058	.01569	.03851	.00000	.50000	51	.00000	1.04750

HALL ACTUARIAL ASSOCIATES
EXHIBIT 7

LEGISLATIVE AUDITOR'S REPORT

6 Actuarial information for STATE EMPLOYEES' RETIREMENT SYSTEM.

- (a) Most recent actuarial valuation date: June 30, 1991.
- (b) This valuation sets forth information concerning contributions applicable to the plan fiscal year beginning July 1, 1991, and ending June 30, 1992.
- (c) Data used in this valuation
- (i) Number of participants as of the valuation date:
- | | |
|---|----------------------|
| Active members. | 70,927 |
| Regular retirees. + DROP. | 19,222 |
| Disability retirees | 1,910 |
| Survivors receiving benefits. | 3,951 |
| Terminated employees due benefits upon attaining retirement age | 392 |
| Terminated employees due refunds. | 13,367 |
| (ii) Payroll of active members on the valuation date | <u>1,368,479,924</u> |
| (iii) Annual benefits in payment on the valuation date. | <u>237,750,804</u> |
- (d) Actuarially required contribution for those systems to which R.S. 11:102 applies
- | | |
|---|----------------------|
| Funding Method <u>Projected Unit Credit</u> . | |
| Unfunded Accrued Liability as of the end of fiscal 1988 | <u>1,825,421,035</u> |
| Amortization Method <u>Increasing Annuity</u> . | |
| Remaining Unamortized Portion of the initial unfunded liability | <u>2,048,966,114</u> |
| Current Unfunded Accrued Liability under this method. | <u>1,982,569,933</u> |
| Actuarially required employer contribution: (at Mid-year) | |
| (i) Employer Normal Cost. | 72,653,899 |
| Amortization Payments for Previous Years (Detail on Exhibit A): | |
| (ii) Previous year's unpaid underpayment or (overpayment) | (1,303,263) |
| (iii) Initial Unfunded Liability (Excludes \$3,917,102 appropriation) | 118,774,719 |
| (iv) Gains and Losses | 4,749,833 |
| (v) Changes in Assumption or Asset Valuation Method. | (9,586,637) |
| (vi) Changes in funding method. | 0 |
| (vii) Changes in plan provisions | 0 |
| (viii) Total employer contribution required (Sum of 6(d)(i) - (vii)). | 185,288,551 |
| (ix) Estimated projected payroll for the coming fiscal year | <u>1,415,393,487</u> |
| (x) Required Employer Contribution Rate (6(d)(viii)/6(d)(ix)). | 13.1% |
| + Appropriation. | 3,917,102 |
- (e) Actuarially required contribution for those systems to which R.S. 11:103 applies
- | | |
|--|--|
| Funding Method <u>Not Applicable</u> . | |
|--|--|
- (f) Average yield on investments last fiscal year. 10.00%
- (g) Actuarial information for accounting purposes (GASB) 5 results)
- Pension Benefit Obligation:
- | | |
|--|----------------------|
| (i) Present retirees and beneficiaries. | 2,155,577,301 |
| (ii) Terminated participants due benefits at retirement age. | 12,114,634 |
| (iii) Terminated participants due a refund of their contributions | 5,768,659 |
| (iv) Active Members: | |
| (1) Accumulated employee contributions. | 674,210,732 |
| (2) Employer-financed vested portion. | 1,312,863,335 |
| (3) Employer-financed nonvested portion | 338,777,669 |
| (v) Total PBO (sum of 6(g)(i) through 6(g)(iv)) | <u>4,499,312,330</u> |
| Actuarial value of assets. | <u>2,516,742,397</u> |
| Unfunded (Assets in Excess of) Pension Benefit Obligation. | <u>1,982,569,933</u> |

Exhibit 7 (Continued)
Legislative Auditor's Report

HALL ACTUARIAL ASSOCIATES

(g) Actuarial assumptions used

Interest rate used 8.25%
Give the name (or source reference) of the particular table used or attach a copy of the table used for the each of the following. Indicate where appropriate that no assumption is made with regard to a particular aspect of the valuation.

	Males	Females
Mortality rates (healthy)		
Mortality rates (disabled)	See copies of pages 19-22 of the 6/30/91	
Termination rates	Actuarial Valuation Report Attached	
Retirement rates		
Disability rates		
Salary scales		

(h) Cost of Living Target Ratio and Funded Ratio of the System: (This section must be completed by state and statewide retirement systems only).

- (i) Funded Ratio of the System as of the 1986 fiscal year end 53464
(ii) Number of fiscal years elapsed since the 1986 fiscal year end multiplied by one-thirtieth of the difference between one hundred percent and the amount in (6)(h)(i) 07756
(iii) Changes in Funded Ratio due to mergers or changes in methods or assumptions after the 1986 fiscal year end;

Date of Change	Change in funded Ratio
6/30/87	(.03148)
6/30/88	.02822
6/30/89	.02420
6/30/91	(.00781)

- Total Change in Funded Ratio 01313
(iv) Number of fiscal years elapsed since the date of each change in (6)(h)(iii) multiplied by one-thirtieth of the amount of such change in funded ratio and of opposite arithmetic sign of such change;

Date of Change	Amortization of Change
6/30/87	.00420
6/30/88	(.00282)
6/30/89	(.00161)

Total Amortization of Changes 00023

- (v) Target Ratio as of the end of the just completed fiscal year. 62510
(Sum of (6)(h) (i) through (iv))
(vi) Actual Funded Ratio of the system as of the just completed fiscal year .55936
(vii) According to my actuarial calculations this system has ___ has not X met the target ratio required to grant a cost of living increase to current benefit recipients.

To the best of my knowledge, the information supplied in item 6 and on statements attached to item 6, if any, is complete and accurate. In my opinion the assumptions used are in the aggregate reasonably related to the experience of the system and to reasonable expectations and represent my best estimate of anticipated experience under the system.

Date October 14, 1991

Signature of Actuary

Charles G. Hall

HALL ACTUARIAL ASSOCIATES

EXHIBIT A
**AMORTIZATION OF UNFUNDED
ACTUARIAL ACCRUED LIABILITY
JUNE 30, 1991**

	<u>DATE 6/30</u>	<u>DESCRIPTION</u>	<u>AMTZ. METHOD</u>	<u>AMTZ. PERIOD</u>	<u>INITIAL LIABILITY</u>	<u>YEARS REMAIN</u>	<u>REMAINING BALANCE</u>	<u>MID-YEAR PAYMENT</u>
1)	1988	Initial Liability	I	40	1,825,421,035	38	2,048,966,114	122,691,821*
2)	1989	Experience Gain	L	15	(51,766,931)	13	(47,873,136)	(5,901,912)
3)	1989	Actuarial Assumption	L	30	(171,979,344)	28	(168,959,840)	(15,030,515)
4)	1990	Experience Loss	L	15	110,124,801	14	106,147,204	12,555,252
5)	1991	Actuarial Assumption	L	30	62,288,922	30	62,288,922	5,443,878
6)	1991	Experience Gain	L	15	(16,696,068)	15	(16,696,068)	(1,903,507)

TOTAL OUTSTANDING BALANCE

1,983,873,196

EMPLOYER'S CREDIT BALANCE

1,303,263

TOTAL UNFUNDED ACTUARIAL
ACCRUED LIABILITY1,982,569,933

*Note: LSU and Unfunded Judges equals 3.192635% of the Initial Liability mid-year payment.