STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL VALUATION COMPLETED AS OF JUNE 30, 1987

Chicago, Illinois
October, 1987

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INTRODUCTION

The law governing the State Employees' Retirement System requires the Actuary, as the technical advisor to the Board of Trustees to:

> ...make an annual valuation of the liabilities and reserves of this System, an annual determination of the amount of contributions required from the State under this Article, and certify the results thereof to this board. (Chapter 108 1/2, Par. 14-138).

The Wyatt Company, as Actuary, has completed a valuation as of June 30, 1987, based upon membership and financial data compiled by the administrative staff of the System, and the results of the valuation are presented in this report.

The valuation was completed using the same actuarial assumptions and methods as used in our prior valuation. The assumptions, which were based on our experience review for the five years ending June 30, 1985, are described in detail beginning on page 19.

Changes Since Last Valuation

Since the last valuation SERS costs and liabilities have been affected by legislation (HB2630). Ad Hoc benefit increases for annuitants and the granting of credit for unused sick leave to employees who defer retirement had the greatest impact. Reported salaries now exclude overtime or shift differentials. An assumption has been added to estimate this component of salary. In addition, salaries for part-time employees are no longer reported on a full-time basis. Changes in the results of the valuation are also due to changes in membership data and fund assets.

Summarized below are certain important results for both years.

		June 30, 1986	June 30, 1987
1.	Number of Active Members	74,012	74,717
2.	Reported Earnings	$1,747,499,291	$1,771,818,583 *
	(Average)	($23,611)	($23,714) *
3.	Number of Members Receiving Payments	31,487	32,322
4.	Annual Benefit Payments	$ 139,783,849	$155,586,877
	(Average)	($4,439)	($4,814)
5.	Assets:		
	(a) Book Value	$1,974,094,683	$2,225,883,146
	(b) Market Value	$2,207,911,623	$2,430,603,635
6.	State Normal Cost	$ 71,117,444	$65,157,458
	Payroll	(4.07%)	(3.55%)
7.	Actuarial Liability	$3,162,210,759	$3,417,908,944
	(Funded Percentage)	(62.4%)	(65.1%)
8.	Unfunded Actuarial Liability	$1,188,116,076	$1,192,025,798

* These numbers reflect the new method of reporting salaries. Under the old method the total reported earnings are $1,867,614,829 and the average earnings are $24,996.

The increase in the unfunded actuarial liability of $3,909,722 was due to the following:

1. Contribution being less than the amount necessary to fund normal cost and interest on the unfunded.

(a)	Unfunded at 6/30/86		$ 1,188,116,076
(b)	Contributions Due		
	(i)	Interest on the unfunded to 6/30/87	$ 95,049,286
	(ii)	Total Normal Cost due 6/30/86	154,242,862
	(iii)	Interest on Normal Cost to 6/30/87	12,339,429
	(iv)	Total Due	$ 261,631,577
(c)	Contributions Paid		
	(i)	Participants	$ 90,096,279
	(ii)	Employing State Agencies and appropriations	109,559,940
	(iii)	Interest on contributions to 6/30/87	7,832,610
	(iv)	Total Paid	$ 207,488,829
(d)	Increase in the Unfunded (b) minus (c)		$ 54,142,748

2. Actuarial (Gains) Losses

(a)	(Gain) from investment return greater than 8%	$ (68,026,803)
(b)	Loss from salary increases greater than 6-1/2%	$ 21,918,010
(c)	(Gain) from retirement at other then the expected age	$ (13,711,529)
(d)	Losses from other sources	$ 129,807

3. Non-Recurring Items

(a)	Decrease due to change in method of reporting salaries	$ (18,576,211)
(b)	Increase due to plan amendments (HB2630)	$ 28,033,700

4. Total $ 3,909,722

5. Unfunded Actuarial Liability at June 30, 1987 $1,192,025,798

APPROPRIATION REQUIREMENTS FOR
FISCAL YEAR JULY 1, 1988 - JUNE 30, 1989

The law governing the System imposes upon the Board of Trustees the duty of certifying:

> ...in each fiscal year to each department the percent of contribution, based upon employees' compensation, required to be paid to the system during the succeeding fiscal year, upon recommendation of the actuary. (Chapter 108 1/2, Par. 14-135.08).

The law also provides that:

> Contributions to the System by the State to meet the requirements of this Article shall be appropriations to each department, or from monies otherwise made available for this purpose, of amounts which, together with members' contributions, interest income from investments and other income received by the system, shall be sufficient to meet the cost of maintaining and administering the system on a funded basis in accordance with actuarial reserve requirements. (Chapter 108 1/2, Par. 14-131).

The law defines "actuarial reserves" as follows:

> An accumulation of funds in advance of benefit payments which will be sufficient with respect to each member and his beneficiaries, if any, to pay the prescribed benefits, computed according to the actuarial tables, without further contributions by or on behalf of the member. (Chapter 108 1/2, Par. 14-103.21).

These requirements are met by a contribution equal to the Normal Cost plus an amount to amortize the Unfunded Actuarial Liability. At its July 1987 meeting the Board of Trustees adopted the policy of amortizing the Unfunded Actuarial Liability, on a level percent of payroll basis, by June 30, 2027. The required contribution is thus determined as follows.

	% of Payroll(1)	Annual Contribution(1)
Normal Cost	3.553%	$ 69,461,150
Amortization of the Unfunded Actuarial Liability By June 30, 2027(2)	2.747%	$ 53,708,331
Total Contribution	6.300%	$123,169,481

(1) Based upon an assumed payroll of $1,955,000,000 for Fiscal Year July 1, 1988 - June 30, 1989.

(2) Assumes total payroll increases by 5.25% annually.

APPROPRIATION REQUIREMENTS FOR
FISCAL YEAR JULY 1, 1988 - JUNE 30, 1989

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	% of Payroll(1)	Annual Contribution(1)
Normal Cost	3.553%	$ 74,613,000
Amortization of the Unfunded Actuarial Liability By June 30, 2027(2)	2.558%	$ 53,708,331
Total Contribution	6.111%	$128,321,331

(1) Based upon an assumed payroll of $2,100,000,000 for Fiscal Year July 1, 1988 - June 30, 1989.

(2) Assumes total payroll increases by 5.25% annually.

	Normal Cost	Actuarial Liability
6. Active Members:		
(a) Pension Benefits	$49,830,535	$1,391,272,292
(b) Cost-of-Living Adjustments	20,833,270	199,503,434
(c) Death Benefits:		
(i) Occupational	1,509,759	4,332,874
(ii) Survivor & Widow	21,137,622	138,507,180
(iii) Non-Occupational	395,483	1,711,431
(iv) Refund	4,801,505	33,376,745
(v) Total	$27,844,369	$177,928,230
(d) Disability:		
(i) Occupational	5,346,056	20,462,057
(ii) Non-Occupational	9,031,479	47,920,129
(iii) Total	$14,377,535	$68,382,186
(e) Withdrawal	35,062,115	77,440,457
(f) Expenses	3,645,000	---
(g) Total	$151,592,824	$1,914,526,599
7. Total Actuarial Liability		$3,417,908,944
8. Assets (Book)		$2,225,883,146
9. Unfunded Actuarial Liability		$1,192,025,798
10. Employee Contributions	$86,435,366	
11. Annual Normal Cost to be Provided by the State	$65,157,458	
(% Payroll)	(3.553%)	

ANNUAL FUNDING REQUIREMENT

12. Entry Age Normal	
(a) Annual Normal Cost as a percent of payroll	3.553%
(b) Level Percent of Payroll Amount to Amortize Unfunded Actuarial Liability by 6/30/2027	$53,708,331
(c) Total Amount for Fiscal Year Ending June 30, 1989, based on payroll of $2.100 billion	$128,321,331
(% payroll)	(6.111%)

Table 2a

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS
FIFTEEN YEAR PROJECTION OF COSTS AND LIABILITIES
(Assumes State Contributions Equal to 48% of Benefit Payments)
(All Dollar Amounts in Millions)

	Fiscal Year Ending 6/30							
	1988	1989	1990	1991	1992	1993	1998	2003
BASIC DATA								
1. Number of Active Members	74,717	74,717	74,717	74,717	74,717	74,717	74,717	74,717
2. Expected Total Payroll *	$2,000	$2,100	$2,210	$2,326	$2,448	$2,577	$3,328	$4,299
VALUATION RESULTS - ENTRY AGE NORMAL								
3. Actuarial Liability	$3,669	$3,934	$4,215	$4,514	$4,833	$5,172	$7,215	$9,903
(Retired Lives Reserves)	(1,507)	(1,569)	(1,631)	(1,701)	(1,775)	(1,861)	(2,518)	(3,686)
4. Assets (Book)	$2,396	$2,578	$2,773	$2,983	$3,209	$3,452	$4,960	$7,067
5. Unfunded Actuarial Liability	$1,273	$1,356	$1,442	$1,531	$1,624	$1,721	$2,255	$2,837
(Funded Percentage)	(65.3)	(65.5)	(65.8)	(66.1)	(66.4)	(66.7)	(68.7)	(71.4)
6. Annual Normal Cost **								
(a) Total	$177	$174	$180	$187	$194	$202	$248	$310
(b) Less Employee Contributions	95	99	104	109	114	120	151	192
(c) Balance	81	75	76	78	80	82	97	118
(% Total Payroll)	(4.07)	(3.55)	(3.43)	(3.35)	(3.26)	(3.19)	(2.91)	(2.74)
7. State Contribution ***	$85	$90	$95	$100	$106	$112	$150	$209
(% Total Payroll)	(4.09)	(4.15)	(4.16)	(4.17)	(4.18)	(4.18)	(4.34)	(4.70)

* Total payroll as advised by the Board for FY 1988 and FY 1989, increasing by 5.25% per annum thereafter.

** Normal Cost rate as certified by the Board based on the valuation for the second preceding fiscal year (includes Administrative Expenses).

*** State Contribution equals 48% of projected benefit payments and administrative expenses (excluding refunds).

THE Wyatt COMPANY

Table 2b

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS
FIFTEEN YEAR PROJECTION OF COSTS AND LIABILITIES
(State Contributions Based on Board's Recommendation)
(All Dollar Amounts in Millions)

	Fiscal Year Ending 6/30							
	1988	1989	1990	1991	1992	1993	1998	2003
BASIC DATA								
1. Number of Active Members	74,717	74,717	74,717	74,717	74,717	74,717	74,717	74,717
2. Expected Total Payroll *	$2,000	$2,100	$2,210	$2,326	$2,448	$2,577	$3,328	$4,299
VALUATION RESULTS - ENTRY AGE NORMAL								
3. Actuarial Liability	$3,669	$3,934	$4,215	$4,514	$4,833	$5,172	$7,215	$9,903
(Retired Lives Reserves)	(1,507)	(1,569)	(1,631)	(1,701)	(1,775)	(1,861)	(2,518)	(3,686)
4. Assets (Book)	$2,459	$2,685	$2,926	$3,185	$3,464	$3,763	$5,565	$8,029
5. Unfunded Actuarial Liability	$1,210	$1,249	$1,289	$1,329	$1,369	$1,410	$1,650	$1,875
(Funded Percentage)	(67.0)	(68.3)	(69.4)	(70.6)	(71.7)	(72.7)	(77.1)	(81.1)
6. Annual Normal Cost **								
(a) Total	$177	$174	$180	$187	$194	$202	$248	$310
(b) Less Employee Contributions	95	99	104	109	114	120	151	192
(c) Balance	81	75	76	78	80	82	97	118
(% Total Payroll)	(4.07)	(3.55)	(3.43)	(3.35)	(3.26)	(3.19)	(2.91)	(2.74)
7. State Contribution ***	$145	$128	$131	$136	$141	$146	$170	$213
(% Total Payroll)	(7.24)	(6.11)	(5.93)	(5.84)	(5.75)	(5.67)	(5.12)	(4.96)

* Total payroll as advised by the Board for FY 1988 and FY 1989, increasing by 5.25% per annum thereafter.

** Normal Cost rate as certified by the Board based on the valuation for the second preceding fiscal year (includes Administrative Expenses).

*** State Contribution equals Normal Cost plus an amount to amortize the unfunded actuarial liability on a level percent of pay basis by June 30, 2027. Future payroll increase assumption was 4% for FY 1988 calculation. A 5.25% assumption is used thereafter.

Table 3

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL PRESENT VALUE OF CREDITED PROJECTED BENEFITS AT JUNE 30, 1987

	Vested	Non-Vested	Total
1. Annuitants			
(a) Participants Currently Receiving Payments	$1,439,023,170	---	$1,439,023,170
(b) Deferred	$6,184,457	---	$6,184,457
2. Inactive Members			
(a) Employee Contributions	$41,174,943	---	$41,174,943
(b) Employer Financed	$16,999,775	---	$16,999,775
3. Active Members:			
(a) Pension Benefits	$936,021,625	$66,917,967	$1,002,939,592
(b) Cost-of-Living Adjustments	$186,138,097	$13,531,650	$199,669,747
(c) Death Benefits:			
(i) Occupational	7,674,057	2,063,894	9,737,951
(ii) Survivor & Widow	154,369,548	14,989,556	169,359,104
(iii) Non-Occupational	2,333,511	515,579	2,849,090
(iv) Refund	39,497,864	3,890,624	43,388,488
(v) Total	$203,874,980	$21,459,653	$225,334,633
(d) Disability:			
(i) Occupational	29,897,783	6,594,972	36,492,755
(ii) Non-Occupational	70,412,839	4,343,955	74,756,794
(iii) Total	$100,310,622	$10,938,927	$111,249,549
(e) Withdrawal	$208,138,838	$53,530,767	$261,669,605
(f) Total	$1,634,484,162	$166,378,964	$1,800,863,126
(g) Employee Contributions	$746,232,158	$113,549,978	$859,782,136
(h) Employer Financed	$888,252,004	$52,828,986	$941,080,990
4. TOTAL	$3,137,866,507	$166,378,964	$3,304,245,471

NOTES:

(1) Credited projected benefits were calculated in accordance with plan provisions in effect on June 30, 1987, based on the members' service as of such date and on the members' historical and projected pay.

(2) Projected years of service were considered only in determining members' expected eligibility for particular benefits.

(3) Future automatic cost-of-living increases were recognized.

(4) The actuarial assumptions utilized were the same as those adopted for for funding purposes.

The combined payment to children may not exceed 50% of the member's final average compensation. Payments to or on account of children terminate upon their death, marriage or attainment of age 18.

If there is no spouse or eligible children, a benefit of 25% of final average compensation is payable to each surviving dependent parent for life.

The monthly benefit is reduced by any payments awarded under the Workmen's Compensation or Occupational Diseases Acts.

10. OTHER DEATH BENEFITS

If the beneficiaries of the member do not qualify for any of the previously described death benefits, one of the following benefits is payable:

A. Before Retirement:

If the member's death occurred while in State service the benefit consists of: (1) a refund of all contributions plus interest credited to the member's account; and (2) a payment equal to one month's salary for each full year of pension credit not to exceed six month's salary. The minimum payment is equal to one month's salary.

If the member had terminated State service but not yet qualified for a pension, the benefit consists of a refund of all of the member's contributions to the System plus the interest credited to the member's account.

B. After Retirement:

The benefit consists of a lump sum payment equal to the excess of contributions plus interest credited to the member's account over the total amount of pension payments made to the member. The minimum payment is $500.00

11. NON-OCCUPATIONAL DISABILITY BENEFITS

A. Qualification and Amount of Payment:

Available to any member under age 70 who has established at least one and one-half years of creditable service and who has been granted a disability leave of absence by his employing agency. The benefit is 50% of final average compensation plus a credit to the member's account of service and contributions. It begins on the 31st day of absence from service on account of disability.

If the member has Social Security coverage as a State employee, the benefit payable by the System is reduced by the amount of any disability payment to which he is entitled under Social Security.

B. Duration of Payment:

The member is eligible for the monthly benefit until the occurrence of any of the following events: (1) disability ceases; (2) resumption of gainful employment; (3) payments are made for a period of time equal to one-half of the service credit established as of the date disability began; (4) attainment of age 65 or payment for five years if later; or (5) attainment of age 70.

12. OCCUPATIONAL DISABILITY BENEFIT

A. Qualification and Amount of Payment:

Provided for any member under age 70 who becomes disabled as the direct result of injury or diseases arising out of and in the course of State employment.

The benefit is 75% of final average compensation plus a credit to the member's account of service and contributions. The cash benefit is reduced by any payment received under the Workmen's Compensation or Occupational Diseases Acts.

B. Duration of Payment:

Monthly benefits are payable until the occurrence of any of the following events: (1) disability ceases; (2) resumption of gainful employment; (3) attainment of age 65 or payment for five years if later; or (4) attainment of age 70.

If termination of the benefit is due to the member having attained age 65 or having received benefits for five years or to age 70, the member is entitled to a retirement pension based upon service credit established as of that date.

C. Temporary Disability Benefit

A member who is initially denied Workers' Compensation benefits and is appealing the denial may receive payment at the nonoccupational rate, 50% of pay, providing all eligibility requirements for the nonoccupational benefit are met, until the determination is made.

13. SEPARATION BENEFITS

Upon termination of State employment a member may obtain a refund of the contributions made to the System. By accepting a refund, a member forfeits all accrued rights and benefits in the System for himself and his beneficiaries.