

EDUCATION AND EXAMINATION COMMITTEE
OF THE
SOCIETY OF ACTUARIES

COURSE 8 RETIREMENT BENEFITS STUDY NOTE

COURSE 8 RETIREMENT BENEFITS CASE STUDY

This case study will be used as a basis for examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to the company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

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National Oil Company - Background

National Oil Company (NOC) is a large well-established company that services oil wells all over the country of Belair. NOC has been in existence for over 30 years and has more than 10,000 full-time salaried and union hourly employees and up to a further 5,000 non-skilled seasonal employees during the non-winter months. Approximately one-half of the seasonal employees return for another season. The full-time workforce is reasonably stable, but turnover in the last 5 years has been greater than desired, due to competitors recruiting NOC's employees.

Normally, an undergraduate degree is a minimum requirement to obtain entry to the salaried workforce and many employees have graduate degrees. About half of NOC's salaried employees are recruited directly from university with the other half coming from competitors.

The company's financial position varies with the price of oil. As oil prices rise, oil companies become increasingly active and in turn require the services of NOC. Conversely, activity slows as oil prices drop. Despite this, the company is usually in a taxable position.

NOC has managed to be successful by staying on the cutting edge of technology. NOC prides itself in being state of the art in processes and software relevant to its industry. This has helped it to stave off competition from both inside and outside of Belair. Although NOC is the largest player in the industry within Belair, there are larger players from outside of the country, with which NOC has to compete. From time to time, there are rumors of a takeover of NOC.

Country of Belair – Background

Belair is a modern developed country with a simplified tax system. Both corporations and individuals are subject to income tax at a flat rate of 40%. Reasonable operating expenses, including contributions to Eligible Retirement Plans (ERPs), reduce taxable income.

No pension legislation exists apart from the rules outlined herein.

Rules that apply to gain ERP status are as follows:

General

- if a company has one or more ERPs, then all employees are entitled to be in at least one of the company's ERPs.

Defined Benefit Plans (DB ERPs)

- employer contributions may not exceed those recommended by an actuary, in accordance with generally accepted actuarial practice
- employer contributions are an eligible expense to reduce the employer's taxable income
- periodic pensions may not exceed \$3,000 per annum for each year of service regardless of form or commencement age
- periodic pensions cannot commence prior to age 55
- investment earnings generated by the ERP pension fund are not taxable
- pension payments are taxed as received in the hands of the recipient
- no employee contributions are permitted

Defined Contribution Plans (DC ERPs)

- employer contributions for any individual plan member cannot exceed \$20,000 annually
- employer contributions are an eligible expense to reduce the employer's taxable income
- investment earnings generated by the ERP pension fund are not taxable until withdrawn
- benefit distributions are taxed as received in the hands of the recipient
- no employee contributions are permitted

Belair's tax system also encourages individuals to save for their retirement through a Personal Pension Account (PPA). The tax rules for PPAs are as follows:

Personal Pension Accounts

- individuals may contribute up to \$20,000 annually to a PPA on a defined contribution basis
- such contributions are tax deductible to the individual
- in addition to the annual contribution limit, individuals may transfer their ERP lump sum termination benefit into their PPA in which case the ERP lump sum is excluded from taxable income until withdrawn from the PPA
- investment earnings on PPAs are not taxable until withdrawn
- withdrawals are subject to tax in the hands of the individual

The tax assistance available under each of the above three arrangements does not depend on the extent of participation under the other two. For example, an individual could participate in a PPA and, if eligible under the plans' rules, also in both a DB ERP and a DC ERP of his or her employer.

Supplemental Retirement Plans (SRPs)

Contributions to a retirement plan that does not meet ERP status are not tax-deductible. Benefits paid to participants under such plans are tax deductible to the company and are taxable to participants, when paid to participants. Such a plan is known as a Supplemental Retirement Plan (SRP). An example of an SRP is a plan that restores the benefits lost by the imposition of the ERP maximums.

Retiree Health Care Plans

Employers in Belair may provide health care benefits to retirees and their spouses through a separate plan which is not intended to qualify for ERP status. Benefits (including insurance premiums) paid under such plans are tax deductible to the company when paid on behalf of participants. Benefits are not taxable to plan participants at any time.

* * *

No social security pension system exists in Belair and there are no state-provided life or health-care benefits.

For financial reporting purposes, Belair has adopted International Accounting Standard No. 19 (IAS 19).

The investment market in Belair is well developed, with substantial trading in government and corporate bonds and equities.

Summary of National Oil's Retirement Benefits

NOC maintains three defined benefit plans:

1. a final-average pay defined benefit (DB) ERP for its full-time salaried employees;
2. a unit benefit DB ERP for its full-time hourly union staff; and
3. a non-eligible pension plan (referred to as the SRP) for its executives that is supplemental to the salaried ERP. This plan has no assets.

In addition, the company has a defined contribution ERP for its seasonal workforce.

Furthermore, full-time salaried and union employees retiring with the company are covered for their lifetime by health benefits.

Extracts of Retirement Benefits Provisions and Financial Information

National Oil Full-Time Salaried Pension Plan

Eligibility	Immediate
Vesting	100% after 5 years of service
Normal Retirement Age	65
Early Retirement Age	55 with 5 years of service
Best Average Earnings	Average annual earnings during 60 consecutive months in which earnings were highest
Earnings	Basic pay, excluding overtime and bonuses
Normal Retirement Benefit	2% of best average earnings times years of service, subject to tax system maximum
Accrued Benefit	Benefit calculated as under the normal retirement benefit formula using best average earnings and service as of date of calculation
Early Retirement Benefit	Accrued benefit reduced by 0.25% per month that early retirement precedes age 62
Form of Benefit	If married, 50% joint & survivor benefit, without reduction. If not married, single life annuity
Optional Forms of Benefit	None
Indexing	None
Termination Benefit	Lump sum equal to actuarial present value of accrued benefit
Pre-Retirement Death Benefit	Lump sum equal to actuarial present value of accrued benefit payable to named beneficiary
Disability Benefit	None

National Oil Full-Time Salaried Pension Plan
Historical Actuarial Valuation Results

1999 2000 2001 2002

Participant Summary - January 1

<i>Active Participants</i>				
(a) count	3,500	4,000	4,110	4,152
(b) average age	45.0	44.6	44.2	44.8
(c) average service	15.2	14.2	14.6	15.0
(d) average future working lifetime	10.7	11.8	12.2	11.6
(e) average plan earnings (prior year)	57,800	58,000	61,500	62,600
<i>Deferred Vested Participants</i>				
(a) count	-	-	-	-
<i>Pensioners (incl beneficiaries)</i>				
(a) count	510	525	550	578
(b) average age	69.6	70.5	71.0	70.9
(c) average annual benefit	18,600	18,700	18,800	19,000

Plan Assets (numbers in \$000's) *

<i>Change in Plan Assets during Prior Year:</i>				
Market Value of Assets at January 1 of prior year	372,166	479,906	551,991	565,609
Employer Contributions during prior year	22,000	-	-	-
Benefit Payments during prior year	(12,286)	(13,118)	(13,640)	(14,280)
Expenses during prior year	-	-	-	-
Investment return during prior year	98,026	85,202	27,259	(5,585)
Market Value of Assets at January 1 of current year	479,906	551,991	565,609	545,745
Rate of return during prior year	26%	18%	5%	-1%
<i>Average Portfolio Mix During Prior Year:</i>				
(a) Domestic Large Cap Equities	39%	36%	35%	33%
(b) Domestic Small Cap Equities	23%	23%	25%	27%
(c) Domestic Fixed Income	23%	24%	25%	26%
(d) International Equities	8%	11%	9%	7%
(e) Real Estate	4%	3%	3%	3%
(f) Cash	3%	3%	3%	4%
(g) Total	100%	100%	100%	100%
<i>Asset Class Returns during Prior Year:</i>				
(a) Domestic Large Cap Equities	43%	17%	4%	-10%
(b) Domestic Small Cap Equities	26%	32%	7%	4%
(c) Domestic Fixed Income	6%	9%	10%	8%
(d) International Equities	21%	18%	-10%	-17%
(e) Real Estate	3%	10%	5%	6%
(f) Cash	3%	3%	3%	4%

* numbers may not add due to rounding

National Oil Full-Time Salaried Pension Plan
Historical Actuarial Valuation Results

	1999	2000	2001	2002
Funding Valuation - January 1 (numbers in \$000's) *				
1. Actuarial Accrued Liability:				
(a) Active participants	325,570	368,341	414,306	460,771
(b) Deferred vested participants	-	-	-	-
(c) Pensioners	81,580	82,467	86,856	92,249
(d) Total	407,150	450,808	501,162	553,020
2. Actuarial Value of Assets	479,906	551,991	565,609	545,745
3. Unfunded Actuarial Accrued Liability: (1d)-(2)	(72,756)	(101,183)	(64,448)	7,275
4. Normal Cost (beg. Of year)	21,419	25,940	28,377	30,718
5. Change in Unfunded AAL during prior year:				
(a) Unfunded AAL at prior valuation date	2,041	(72,756)	(101,183)	(64,448)
(b) Adjustment for Interest	163	(5,820)	(8,095)	(5,156)
(c) Normal Cost w/interest less contributions	(623)	23,133	28,015	30,647
(d) (Gain)/Loss on investment	(67,864)	(47,335)	16,355	50,262
(e) (Gain)/Loss on termination	(300)	1,000	500	700
(f) (Gain)/Loss on salary increases less than expected	(5,000)	50	900	(4,000)
(g) (Gain)/Loss on mortality	(300)	150	(350)	(220)
(h) (Gain)/Loss on retirement	225	(200)	(400)	(500)
(i) (Gain)/Loss on expenses	-	-	-	-
(j) (Gain)/Loss on all other factors	(1,099)	596	(190)	(11)
(k) Unfunded AAL at current valuation date	(72,756)	(101,183)	(64,448)	7,275
6. Actuarial Basis				
(a) Interest	8.00%	8.00%	8.00%	8.00%
(b) Salary scale	5.00%	5.00%	5.00%	5.00%
(c) Consumer Price Index	3.50%	3.50%	3.50%	3.50%
(d) Mortality	GAM83			
(e) Turnover	Based on NOC experience for 1986-1988			
(f) Retirement age	Age 62			
(g) Proportion married and age difference	80% married, husbands 3 years older than wives			
(h) Expenses	Assume all expenses paid by company			
(i) Asset Valuation Method	Market value of assets			
(j) Actuarial Cost Method	Projected unit credit			

* numbers may not add due to rounding

National Oil Full-Time Salaried Pension Plan
Historical Actuarial Valuation Results

1999 2000 2001 2002

Expense Valuation - January 1 (numbers in \$000's) *

1. Reconciliation of funded status at valuation date:				
(a) Obligations:				
(i) accrued benefit obligation	(272,735)	(293,025)	(358,331)	(428,357)
(ii) projected benefit obligation	(474,322)	(450,808)	(551,278)	(659,011)
(b) Market Value of Assets	479,906	551,991	565,609	545,745
(c) Surplus: (a)(ii) + (b)	5,584	101,183	14,332	(113,267)
(d) Unrecognized (gains)/losses	(47,146)	(158,574)	(77,428)	30,660
(e) Prepaid/(Accrued) expense	(41,562)	(57,392)	(63,097)	(82,607)
2. Pension Expense:				
(a) Service Cost (beg. of year)	25,167	25,940	31,215	36,862
(b) Interest Cost	33,301	37,615	40,297	44,768
(c) Expected return on assets	(42,639)	(49,089)	(50,291)	(49,893)
(d) Recognition of prior service cost	-	-	-	-
(e) Amortization of unrecognized (gain)/loss	-	(8,761)	(1,710)	-
(f) Pension Expense for year	15,830	5,705	19,510	31,736
3. Actuarial Basis and Supplemental Data				
(a) Discount rate	6.75%	8.00%	7.00%	6.50%
(b) Return on assets	9.00%	9.00%	9.00%	9.00%
(c) Salary scale	4.25%	5.00%	4.00%	4.00%
(d) Consumer Price Index	3.50%	3.50%	3.50%	3.50%
(e) Mortality		GAM83		
(f) Turnover		Based on NOC experience for 1986-1988		
(g) Proportion married and age difference		80% married, husbands 3 years older than wives		
(h) Retirement age		Age 62		
(i) Expenses		Assume all expenses paid by company		
(j) Asset Valuation Method		Market value of assets		
(k) Actuarial Cost Method		Projected unit credit		
(l) Employer contributions	-	-	-	31,532
(m) Benefit payments	(12,286)	(13,118)	(13,640)	(14,280)

* numbers may not add due to rounding

**National Oil Full-Time Salaried Pension Plan
Reconciliation of Plan Participants (1999-2002)**

	<u>Active</u>	<u>Pensioners/ Beneficiaries</u>	<u>Total</u>
1. Participants as of January 1, 1999	3,500	510	4,010
- New Entrants/Rehires	827	-	827
- Terminated Nonvested	(120)	-	(120)
- Terminated Vested (Lump Sum Cashout)	(185)	-	(185)
- Retirement	(20)	20	-
- Death w/ Beneficiary	(2)	2	-
- Death w/o Beneficiary	-	(7)	(7)
- Net change	500	15	515
2. Participants as of January 1, 2000	4,000	525	4,525
- New Entrants/Rehires	416	-	416
- Terminated Nonvested	(110)	-	(110)
- Terminated Vested (Lump Sum Cashout)	(165)	-	(165)
- Retirement	(30)	30	-
- Death w/ Beneficiary	(1)	1	-
- Death w/o Beneficiary	-	(6)	(6)
- Net change	110	25	135
3. Participants as of January 1, 2001	4,110	550	4,660
- New Entrants/Rehires	400	-	400
- Terminated Nonvested	(140)	-	(140)
- Terminated Vested (Lump Sum Cashout)	(180)	-	(180)
- Retirement	(35)	35	-
- Death w/ Beneficiary	(3)	3	-
- Death w/o Beneficiary	-	(10)	(10)
- Net change	42	28	70
4. Participants as of January 1, 2002	4,152	578	4,730

**National Oil Full-Time Salaried Pension Plan
Age/Svc/Earnings as of January 1, 2002**

Age (Years)	# Participants	Average Salary	Service (Years)					Totals
			< 5	5-10	10-15	15-20	>20	
< 25	180	32,900	59	-	-	-	239	
			41,900	-	-	-	35,122	
25-35	209	43,100	145	85	6	-	445	
			53,500	57,600	60,400	-	49,492	
35-45	270	54,200	221	244	420	120	1,275	
			61,100	64,000	70,900	71,200	64,373	
45-55	180	58,000	110	222	345	681	1,538	
			60,100	64,400	70,600	71,800	68,011	
55-65	70	55,900	36	78	95	335	614	
			58,100	62,600	69,100	69,900	66,561	
> 65	6	43,500	6	11	6	12	41	
			47,800	43,200	53,600	50,800	47,663	
Totals	915	48,282	577	640	872	1,148	4,152	
			56,711	62,761	70,394	70,963	62,600	
	Avg Age	44.8						
	Avg Svc	15.0						
	Avg Salary	62,600						

National Oil Full-Time Salaried Supplemental Retirement Plan (SRP)

Eligibility	Immediate
Normal Retirement Age	65
Early Retirement Age	55 with 5 years of service
Accrued Benefit	Accrued Benefit calculated under the provisions of the Salaried Pension Plan without regard to tax system maximums <u>less</u> actual Accrued Benefit under the Salaried Pension Plan
Normal Retirement Benefit	Accrued Benefit
Early Retirement Benefit	Accrued Benefit reduced by 0.25% per month that early retirement proceeds age 62
Commencement Date and Form of Benefit	Must be same as under Salaried Pension Plan
Indexing	None
Termination Benefit	None
Pre-Retirement Death Benefit	None
Disability Benefit	None

Supplemental Retirement Plan
Historical Valuation Results - January 1

	1999	2000	2001	2002
Participant Summary				
1 Active Participants				
(a) count	37	39	41	42
(b) average age	50.1	49.9	50.5	51.0
(c) average service	15.9	15.4	16.0	16.2
(d) average future working lifetime	7.6	7.9	8.2	7.5
(e) average earnings (prior year)	284,000	286,000	290,000	295,000
2. Deferred Vested Participants				
(a) count	0	0	0	0
3 Pensioners (incl beneficiaries)				
(a) count	8	10	11	12
(b) average age	70.0	66.5	67.0	67.5
(c) average annual benefit	12,875	11,250	11,500	12,000
Expense Valuation Results (numbers in \$000's) *				
1. Reconciliation of funded status at valuation date:				
(a) Obligations				
(i) accrued benefit obligation	(9,194)	(7,404)	(10,642)	(12,704)
(ii) projected benefit obligation	(14,260)	(11,943)	(15,736)	(18,784)
(b) Market Value of Assets	0	0	0	0
(c) Surplus: (a)(ii) + (b)	(14,260)	(11,943)	(15,736)	(18,784)
(d) Unrecognized prior service costs	0	0	0	0
(e) Unrecognized (gain)/loss	1,319	(2,523)	11	1,370
(f) Prepaid/(accrued) expense	(12,942)	(14,467)	(15,724)	(17,414)
2. Pension Expense				
(a) Service cost (beg. of year)	627	544	672	753
(b) Interest cost	1,001	994	1,144	1,265
(c) Expected ROA	0	0	0	0
(d) Prior svc cost recognized	0	0	0	0
(e) Amort of unrec (gain)/loss	0	(168)	0	0
(f) Pension Expense for year	1,628	1,370	1,816	2,019
3. Benefit Payments				
	103	113	127	144
4. Actuarial Basis				
(a) Discount rate	6.75%	8.00%	7.00%	6.50%
(b) Return on assets	9.00%	9.00%	9.00%	9.00%
(c) Salary scale	4.25%	5.00%	4.00%	4.00%
(d) CPI	3.50%	3.50%	3.50%	3.50%
(e) All other assumptions	Same as for Full-time Salaried Pension Plan			

* numbers may not add due to rounding

National Oil Full-Time Hourly Union Pension Plan

Eligibility	Immediate
Vesting	100% after 5 years of service
Normal Retirement Age	65
Early Retirement Age	55 with 10 years of service
Normal Retirement Benefit	<p>\$65 per month times years of service for terminations/ retirements during 2000</p> <p><i>Previously negotiated increases in benefit multiplier:</i></p> <ul style="list-style-type: none">- \$70 per month for terminations/retirements during 2001- \$75 per month for terminations/retirements during 2002 and beyond
Accrued Benefit	Benefit calculated as under the normal retirement benefit formula based on service and multiplier as of date of calculation.
Early Retirement Benefit	Unreduced benefit at 62 with 30 years of service, otherwise reduced by 0.25% per month that early retirement precedes Normal Retirement Age.
Form of Benefit	If married, 50% joint & survivor benefit without reduction If not married, single life annuity.
Optional Forms of Benefit	None
Post-Retirement Indexing	Lesser of 1% or Belair CPI each year after pension commencement
Termination Benefit	Lump sum equal to actuarial present value of accrued benefit assuming no indexing
Pre-Retirement Death Benefit	Lump sum equal to actuarial present value of accrued benefit assuming no indexing, payable to named beneficiary
Disability Benefit	None

National Oil Full-Time Hourly Union Pension Plan
Historical Actuarial Valuation Results

1999 2000 2001 2002

Participant Summary - January 1

<i>Active Participants</i>				
(a) count	5,480	6,200	6,440	6,451
(b) average age	44.2	44.5	44.1	44.4
(c) average service	14.6	14.9	15.3	15.5
(d) average future working lifetime	12.2	12.1	12.4	12.1
(e) average plan earnings (prior year)	33,000	34,300	36,000	36,700
<i>Deferred Vested Participants</i>				
(a) count	-	-	-	-
<i>Pensioners (incl beneficiaries)</i>				
(a) count	830	880	920	972
(b) average age	68.8	69.6	70.3	70.4
(c) average annual benefit	9,400	9,600	9,700	9,800

Plan Assets (numbers in \$000's) *

<i>Change in Plan Assets during Prior Year:</i>				
Market Value of Assets at January 1 of prior year	203,056	250,624	293,912	318,477
Employer Contributions during prior year	15,000	14,500	16,000	22,000
Benefit Payments during prior year	(10,542)	(11,548)	(12,144)	(12,751)
Expenses during prior year	-	-	-	-
Investment return during prior year	43,110	40,336	20,709	6,462
Market Value of Assets at January 1 of current year	250,624	293,912	318,477	334,188
Rate of return during prior year	21%	16%	7%	2%
<i>Average Portfolio Mix During Prior Year:</i>				
(a) Domestic Large Cap Equities	29%	28%	25%	23%
(b) Domestic Small Cap Equities	15%	19%	22%	24%
(c) Domestic Fixed Income	42%	43%	45%	45%
(d) International Equities	9%	6%	4%	2%
(e) Real Estate	3%	2%	2%	2%
(f) Cash	2%	2%	2%	4%
(g) Total	100%	100%	100%	100%
<i>Asset Class Returns during Prior Year:</i>				
(a) Domestic Large Cap Equities	43%	17%	4%	-10%
(b) Domestic Small Cap Equities	26%	32%	7%	4%
(c) Domestic Fixed Income	6%	9%	10%	8%
(d) International Equities	21%	18%	-10%	-17%
(e) Real Estate	3%	10%	5%	6%
(f) Cash	3%	3%	3%	4%

* numbers may not add due to rounding

National Oil Full-Time Hourly Union Pension Plan
Historical Actuarial Valuation Results

1999 2000 2001 2002

Funding Valuation - January 1 (numbers in \$000's) *

1. Actuarial Accrued Liability:								
<i>Active Multiplier</i>	\$	60	\$	65	\$	70	\$	75
(a) Active participants		186,828		223,521		268,330		317,873
(b) Deferred vested participants		-		-		-		-
(c) Pensioners		76,460		81,946		84,778		90,493
(d) Total		263,288		305,467		353,108		408,367
2. Actuarial Value of Assets		250,624		293,912		318,477		334,188
3. Unfunded Actuarial Accrued Liability: (1d)-(2)		12,664		11,555		34,631		74,179
4. Normal Cost (beg. Of year)		12,796		15,001		17,538		20,508
5. Change in Unfunded AAL during prior year:								
(a) Unfunded AAL. at prior valuation date		35,659		12,664		11,555		34,631
(b) Adjustment for Interest		2,853		1,013		924		2,771
(c) Normal Cost w/interest less contributions		(2,109)		(680)		202		(3,059)
(d) (Gain)/Loss on investment		(26,687)		(20,168)		2,958		19,386
(e) (Gain)/Loss on termination		(300)		250		(750)		(1,025)
(f) (Gain)/Loss on salary increases less than expected		-		-		-		-
(g) (Gain)/Loss on mortality		(300)		150		(100)		200
(h) (Gain)/Loss on retirement		225		(200)		(300)		(250)
(i) (Gain)/Loss on expenses		-		-		-		-
(j) (Gain)/Loss on all other factors		209		1,332		976		334
(k) Change in active benefit multiplier		3,114		17,194		19,166		21,192
(l) Unfunded AAL at current valuation date		12,664		11,555		34,631		74,179
6. Actuarial Basis								
(a) Interest		8.00%		8.00%		8.00%		8.00%
(b) Salary scale				N/A				
(c) Consumer Price Index		3.50%		3.50%		3.50%		3.50%
(d) Mortality				GAM83				
(e) Turnover				Based on NOC experience for 1986-1988				
(f) Retirement age				Age 62, with the appropriate early retirement reduction, if any				
(g) Proportion married and age difference				80% married, husbands 3 years older than wives				
(h) Expenses				Assume all expenses paid by company				
(i) Post-retirement indexing		1.00%		1.00%		1.00%		1.00%
(j) Asset Valuation Method				Market value of assets				
(k) Actuarial Cost Method				Unit credit				

* numbers may not add due to rounding

National Oil Full-Time Hourly Union Pension Plan
Historical Actuarial Valuation Results

1999 2000 2001 2002

Expense Valuation - January 1 (numbers in \$000's) *

1. Reconciliation of funded status at valuation date:								
(a) Obligations: (active multiplier)	\$	60	\$	75	\$	75	\$	75
(i) accrued benefit obligation		(319,552)		(339,854)		(438,252)		(517,303)
(ii) projected benefit obligation		(319,552)		(339,854)		(438,252)		(517,303)
(b) Market Value of Assets		250,624		293,912		318,477		334,188
(c) Surplus: (a)(ii) + (b)		(68,928)		(45,943)		(119,775)		(183,115)
(d) Prior Service Cost to be recognized		-		51,582		-		-
(e) Unrecognized (gains)/losses		59,887		(18,025)		53,039		112,363
(f) Prepaid/(Accrued) expenses		(9,041)		(12,386)		(66,736)		(70,752)
2. Pension Expense:								
(a) Service Cost (beg. Of year)		15,996		17,309		22,549		26,660
(b) Interest Cost		22,294		28,111		31,831		34,943
(c) Expected return on assets		(22,734)		(26,652)		(29,106)		(30,853)
(d) Recognition of prior service cost		-		51,582		-		-
(e) Amortization of unrecognized (gain)/loss		2,289		-		743		5,011
(f) Pension Expense		17,845		70,350		26,016		35,761
3. Actuarial Basis and Supplemental Data								
(a) Discount rate		6.75%		8.00%		7.00%		6.50%
(b) Return on assets		9.00%		9.00%		9.00%		9.00%
(c) Salary scale				N/A				
(d) Consumer Price Index		3.50%		3.50%		3.50%		3.50%
(e) Mortality				GAM83				
(f) Turnover				Based on NOC experience for 1986-1988				
(g) Retirement age				Age 62, with the appropriate early retirement reduction, if any				
(h) Proportion married and age difference				80% married, husbands 3 years older than wives				
(i) Expenses				Assume all expenses paid by company				
(j) Post-retirement indexing		1.00%		1.00%		1.00%		1.00%
(k) Asset Valuation Method				Market value of assets				
(l) Actuarial Cost Method				Projected unit credit				
(m) Employer contributions		14,500		16,000		22,000		30,000
(n) Benefit payments		(10,542)		(11,548)		(12,144)		(12,751)

* numbers may not add due to rounding

**National Oil Full-Time Hourly Union Pension Plan
Reconciliation of Plan Participants (1999-2002)**

	<u>Active</u>	<u>Pensioners/ Beneficiaries</u>	<u>Total</u>
1. Participants as of January 1, 1999	5,480	830	6,310
- New Entrants/Rehires	1,100	-	1,100
- Terminated Nonvested	(175)	-	(175)
- Terminated Vested (Lump Sum Cashout)	(150)	-	(150)
- Retirement	(54)	54	-
- Death w/ Beneficiary	(1)	1	-
- Death w/o Beneficiary	-	(5)	(5)
- Net change	720	50	770
2. Participants as of January 1, 2000	6,200	880	7,080
- New Entrants/Rehires	652	-	652
- Terminated Nonvested	(165)	-	(165)
- Terminated Vested (Lump Sum Cashout)	(200)	-	(200)
- Retirement	(45)	45	-
- Death w/ Beneficiary	(2)	2	-
- Death w/o Beneficiary	-	(7)	(7)
- Net change	240	40	280
3. Participants as of January 1, 2001	6,440	920	7,360
- New Entrants/Rehires	500	-	500
- Terminated Nonvested	(185)	-	(185)
- Terminated Vested (Lump Sum Cashout)	(250)	-	(250)
- Retirement	(50)	50	-
- Death w/ Beneficiary	(4)	4	-
- Death w/o Beneficiary	-	(2)	(2)
- Net change	11	52	63
4. Participants as of January 1, 2002	6,451	972	7,423

**National Oil Full-Time Hourly Union Pension Plan
Age/Svc/Earnings as of January 1, 2002**

Age (Years)			Service (Years)					Totals
	< 5	5-10	10-15	15-20	>20			
< 25	# Participants 290	50	-	-	-	340		
	Average Salary 23,600	28,900	-	-	-	24,379		
25-35	# Participants 375	110	118	35	-	638		
	Average Salary 25,200	30,000	35,800	36,300	-	28,597		
35-45	# Participants 482	350	440	835	260	2,367		
	Average Salary 25,700	30,300	37,000	42,300	44,500	36,402		
45-55	# Participants 90	141	319	682	919	2,151		
	Average Salary 23,500	30,300	36,400	41,000	44,200	40,251		
55-65	# Participants 100	45	65	165	561	936		
	Average Salary 23,500	27,500	34,000	38,400	44,400	39,575		
> 65	# Participants 1	4	7	3	4	19		
	Average Salary 19,700	20,400	24,000	23,200	24,000	22,889		
Totals	# Participants 1,338	700	949	1,720	1,744	6,451		
	Average Salary 24,788	29,916	36,348	41,255	44,263	36,700		
	Avg Age 44.4							
	Avg Svc 15.5							
	Avg Salary 36,700							

National Oil Part-Time DC Pension Plan

Eligibility	Immediate
Vesting	Immediate
Employer Contributions	90¢ per hour worked
Plan Fund	The employer invests the contributions in GIC's. There are no employee investment choices.
Account Balance	Contributions are accumulated in member's individual account earning interest at the rate of return earned by the Plan Fund.
Loans	Not permitted.
Benefit on Termination or Retirement	Account balance is transferred to a PPA for the member after one year from date of termination or retirement, unless employee has since returned to employment with NOC.
Benefit on Death	Account balance is payable to named beneficiary

National Oil Part-Time DC Pension Plan
Historical Results - January 1

1999 2000 2001 2002

Participant Summary

(a) number participating during prior year	4,685	5,114	5,650	5,700
(b) average age	30.9	29.9	28.6	29.0
(c) average hours worked in prior year	1,200	1,185	1,250	1,260
(d) average earnings per hour in prior year	14.50	15.00	15.30	15.70

Plan Assets (numbers in \$000's) *

<i>Change in Plan Assets during Prior Year:</i>				
Market Value of Assets at January 1 of prior year	21,367	24,347	27,891	31,119
Employer Contributions during prior year	5,060	5,454	6,356	6,464
Benefit Payments during prior year	(3,411)	(3,677)	(4,285)	(4,358)
Expenses during prior year	-	-	-	-
Investment return during prior year	1,331	1,767	1,157	965
Market Value of Assets at January 1 of current year	24,347	27,891	31,119	34,191
Rate of return during prior year	6%	7%	4%	3%

** numbers may not add due to rounding*

National Oil Full-Time Salaried and Union Retiree Health Benefit Program

Eligibility	Immediate		
Earliest Retirement Age	55		
Benefits	Retirees and their spouses may elect to participate in a fully insured group health plan, with the portion of premium paid by the plan as shown below:		
Annual Premium Cost-Sharing	Years of service		
	<u>at Retirement</u>	<u>Plan</u>	<u>Retiree/Spouse</u>
	0 - 4	0%	100%
	5 - 9	25%	75%
	10 - 14	50%	50%
	15 - 19	75%	25%
20 +	100%	0%	

Retiree Health and Welfare Program
Historical Valuation Results

	1999	2000	2001	2002
Expense Valuation Results - January 1 (numbers in \$000's) *				
1. Reconciliation of funded status at valuation date:				
(a) APBO				
(i) actives	(339,772)	(215,887)	(348,247)	(384,885)
(ii) retirees	(182,954)	(156,332)	(186,636)	(248,426)
(iii) total	(522,726)	(372,219)	(534,883)	(633,310)
(b) Market Value of Assets	0	0	0	0
(c) Surplus: (a) + (b)	(522,726)	(372,219)	(534,883)	(633,310)
(d) Unrecognized prior service costs	0	0	0	0
(e) Unrecognized (gain)/loss	24,725	(168,739)	(26,660)	23,491
(f) Prepaid/(accrued) expense	(498,001)	(540,958)	(561,543)	(609,819)
2. Expense				
(a) Service cost (beg. of year)	22,439	17,526	26,883	31,057
(b) Interest cost	36,267	30,520	38,717	42,603
(c) Expected ROA	0	0	0	0
(d) Prior svc cost recognized	0	0	0	0
(e) Amort of unrec (gain)/loss	0	(10,960)	0	0
(f) Expense for year	58,706	37,086	65,600	73,660
3. Benefit Payments	15,750	16,500	17,325	17,875
4. Actuarial Basis				
(a) Discount rate	6.75%	8.00%	7.00%	6.50%
(b) Return on assets	9.00%	9.00%	9.00%	9.00%
(c) Medical trend				
Initial rate	7.00%	6.50%	8.00%	8.00%
Annual decrease	0.50%	0.50%	0.50%	0.50%
Ultimate rate	4.50%	4.50%	4.50%	4.50%
Year ultimate trend rate reached	2004	2004	2008	2008
(d) CPI	3.50%	3.50%	3.50%	3.50%
(e) group premium per insured	7,600	7,600	7,750	7,850
(f) demographic assumptions	Same as those used for pension plans			

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