

EDUCATION AND EXAMINATION COMMITTEE  
OF THE  
SOCIETY OF ACTUARIES

COMPANY/SPONSOR PERSPECTIVE (CSP)  
RETIREMENT BENEFITS STUDY NOTE

**RETIREMENT BENEFITS CASE STUDY—U.S.**

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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## **Case Study - Course CSP Retirement - US**

### **National Oil Company - Background**

National Oil Company (NOC) is a large well-established company that services oil wells all over the country of Vosne. 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 Vosne. Although NOC is the largest player in the industry within Vosne, 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 Vosne – Background**

Vosne 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
- employer contributions may or may not be dependent on employee contributions
- individuals may contribute up to \$20,000 annually
- such contributions are tax deductible to the individual

The tax assistance available under each of the above two arrangements does not depend on the extent of participation under the other one. For example, an individual could participate in a DC ERP and, if eligible under the plans' rules, also a DB 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 Vosne 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 payable as an indemnity for health related services are not taxable to plan participants at any time.

\* \* \*

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

For financial reporting purposes, Vosne adopted FASB Accounting Standards.

The investment market in Vosne 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 ERP for its full-time salaried employees;
2. a unit benefit defined benefit 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, eligible 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	Base 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**

	2005	2006	2007	2008	2009	2010
<b>Participant Summary - January 1</b>						
<b>Active Participants</b>						
(a) count	4,305	4,268	4,287	4,250	4,118	4,067
(b) average age	46.1	46.6	47.0	47.5	48.0	48.5
(c) average service	16.4	16.8	17.3	17.8	18.4	18.7
(d) average future working lifetime	11.0	10.8	11.0	10.8	10.5	10.7
(e) average future working lifetime to vesting (for those not)	N/A	N/A	N/A	N/A	N/A	3.0
(f) average plan earnings (prior year)	68,000	71,000	73,000	74,000	75,000	78,000
<b>Deferred Vested Participants</b>						
(a) count	-	-	-	-	-	-
<b>Pensioners (incl beneficiaries)</b>						
(a) count	640	665	697	736	775	804
(b) average age	70.5	70.2	69.8	69.7	70.5	70.5
(c) average annual benefit	19,500	19,700	20,100	20,300	20,800	21,200

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

<b>Change in Plan Assets during Prior Year:</b>						
Market Value of Assets at January 1 of prior year	674,049	771,730	859,388	1,003,940	1,027,990	875,898
Employer Contributions during prior year	37,000	39,338	42,134	41,645	40,564	40,526
Benefit Payments during prior year	(19,480)	(20,500)	(22,000)	(27,000)	(28,000)	(29,000)
Expenses during prior year	-	-	-	-	-	-
Investment return during prior year	80,162	68,819	124,419	9,405	(164,656)	94,955
Market Value of Assets at January 1 of current year	771,730	859,388	1,003,940	1,027,990	875,898	982,379
Rate of return during prior year	12%	9%	14%	1%	-16%	11%
<b>Average Portfolio Mix During Prior Year:</b>						
(a) Domestic Large Cap Equities	30%	29%	35%	32%	25%	31%
(b) Domestic Small Cap Equities	27%	28%	22%	21%	19%	21%
(c) Domestic Fixed Income	26%	27%	30%	34%	40%	36%
(d) International Equities	13%	11%	9%	7%	9%	5%
(e) Real Estate	2%	3%	2%	3%	4%	4%
(f) Cash	2%	2%	2%	3%	3%	3%
(g) Total	100%	100%	100%	100%	100%	100%
<b>Asset Class Returns during Prior Year:</b>						
(a) Domestic Large Cap Equities	15%	13%	23%	-2%	-30%	15%
(b) Domestic Small Cap Equities	14%	7%	18%	-4%	-40%	20%
(c) Domestic Fixed Income	7%	3%	4%	5%	2%	4%
(d) International Equities	12%	17%	10%	5%	-20%	6%
(e) Real Estate	3%	12%	8%	10%	3%	3%
(f) Cash	1%	2%	2%	2%	2%	2%

\* numbers may not add due to rounding

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

	2005	2006	2007	2008	2009	2010
<b>Funding Valuation - January 1 (numbers in \$000's) *</b>						
<b>1. Actuarial Accrued Liability:</b>						
(a) Active participants	645,138	707,847	720,460	722,038	745,684	791,900
(b) Deferred vested participants	-	-	-	-	-	-
(c) Pensioners	111,072	117,905	127,909	131,479	141,856	149,994
(d) Total	756,210	825,751	848,369	853,517	887,540	941,894
<b>2. Actuarial Value of Assets</b>	771,730	859,388	1,003,940	1,027,990	875,898	982,379
<b>3. Unfunded Actuarial Accrued Liability: (1d)-(2)</b>	(15,520)	(33,636)	(155,572)	(174,473)	11,642	(40,485)
<b>4. Normal Cost (beg. Of year)</b>	39,338	42,134	41,645	40,564	40,526	42,348
<b>5. Change in Unfunded AAL during prior year:</b>						
(a) Unfunded AAL at prior valuation date	19,661	(15,520)	(33,636)	(155,572)	(174,473)	11,642
(b) Adjustment for Interest	1,376	(1,048)	(2,186)	(10,501)	(12,213)	815
(c) Normal Cost w/interest less contributions	1,146	1,327	1,369	1,406	1,420	1,419
(d) (Gain)/Loss on investment	(32,365)	(16,092)	(67,904)	58,856	237,055	(33,239)
(e) (Gain)/Loss on termination	(8,100)	(11,000)	(8,000)	(13,000)	(17,000)	(15,000)
(f) (Gain)/Loss on salary increases less than expected	(7,000)	2,000	(4,000)	(7,000)	(12,000)	5,000
(g) (Gain)/Loss on mortality	(4,000)	(6,800)	1,000	1,500	1,800	1,300
(h) (Gain)/Loss on retirement	(4,700)	(7,400)	(5,000)	(7,000)	(13,000)	(12,500)
(i) (Gain)/Loss on assumption changes	19,100	21,000	(37,000)	(43,000)	-	-
(j) (Gain)/Loss on expenses	-	-	-	-	-	-
(k) (Gain)/Loss on all other factors	(639)	(104)	(214)	(161)	54	78
(l) Unfunded AAL at current valuation date	(15,520)	(33,636)	(155,572)	(174,473)	11,642	(40,485)
<b>6. Actuarial Basis</b>						
(a) Interest	6.75%	6.50%	6.75%	7.00%	7.00%	7.00%
(b) Salary scale	3.75%	3.50%	3.50%	3.50%	3.50%	3.50%
(c) Consumer Price Index	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
(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, male spouse 3 years older than female spouse		
(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**

	2005	2006	2007	2008	2009	2010
<b>Expense Valuation - January 1 (numbers in \$000's) *</b>						
<b>1. Reconciliation of funded status at valuation date:</b>						
(a) Accumulated Benefit Obligation	(559,852)	(636,422)	(665,121)	(680,663)	(777,235)	(844,146)
(b) Projected Benefit Obligation						
(i) retirees / actives - fully vested	N/A	N/A	N/A	N/A	N/A	(1,121,508)
(ii) actives - not fully vested	N/A	N/A	N/A	N/A	N/A	(84,415)
(iii) total	(861,311)	(979,111)	(1,023,263)	(1,047,175)	(1,110,336)	(1,205,922)
(c) Fair Value of Assets	771,730	859,388	1,003,940	1,027,990	875,898	982,379
(d) Funded Status: (b) + (c)	(89,581)	(119,724)	(19,323)	(19,184)	(234,437)	(223,543)
(e) Unrecognized (gains)/losses	1,950	28,400	(70,662)	(71,446)	141,037	111,010
(f) Prepaid/(Accrued) expense	(87,631)	(91,324)	N/A	N/A	N/A	N/A
<b>2. Pension Expense:</b>						
(a) Service Cost (beg. of year)	47,699	50,021	52,056	50,705	52,495	57,065
(b) Interest Cost	53,956	56,039	61,198	65,063	66,058	68,667
(c) Expected return on assets	(58,624)	(65,265)	(70,963)	(72,434)	(61,751)	(69,234)
(d) Amortization of past service cost	-	-	-	-	-	-
(e) Amortization of net actuarial (gain)/loss **	-	-	-	-	2,857	-
(f) Pension Expense for year	43,031	40,795	42,291	43,334	59,659	56,498
<b>3. Actuarial Basis and Supplemental Data</b>						
(a) Discount rate	6.00%	5.50%	5.75%	6.00%	5.75%	5.50%
(b) Return on assets	7.50%	7.50%	7.00%	7.00%	7.00%	7.00%
(c) Salary scale	3.75%	3.50%	3.75%	4.00%	4.00%	4.00%
(d) Consumer Price Index	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
(e) Mortality						
(f) Turnover						
(g) Proportion married and age difference						
(h) Retirement age						
(i) Expenses						
(j) Asset Valuation Method						
(k) Actuarial Cost Method						
(l) Employer contributions	39,338	42,134	41,645	40,564	40,526	42,348
(m) Benefit payments	(19,480)	(20,500)	(22,000)	(27,000)	(28,000)	(29,000)

\* numbers may not add due to rounding

\*\* gains/losses exceeding 10% of the greater of the Projected Benefit Obligation and the Fair Value of Assets are amortized over the average future working lifetime of active participants



**National Oil Full-Time Salaried Pension Plan  
Reconciliation of Plan Participants (2005 - 2010)**

	<u>Active</u>	<u>Pensioners/ Beneficiaries</u>	<u>Total</u>
<b>1. Participants as of January 1, 2005</b>	<b>4,305</b>	<b>640</b>	<b>4,945</b>
- New Entrants/Rehires	250	-	250
- Terminated Nonvested	(115)	-	(115)
- Terminated Vested (Lump Sum Cashout)	(140)	-	(140)
- Retirement	(30)	30	-
- Death w/ Beneficiary	(2)	2	-
- Death w/o Beneficiary	-	(7)	(7)
- Net change	(37)	25	(12)
<b>2. Participants as of January 1, 2006</b>	<b>4,268</b>	<b>665</b>	<b>4,933</b>
- New Entrants/Rehires	300	-	300
- Terminated Nonvested	(130)	-	(130)
- Terminated Vested (Lump Sum Cashout)	(115)	-	(115)
- Retirement	(35)	35	-
- Death w/ Beneficiary	(1)	1	-
- Death w/o Beneficiary	-	(4)	(4)
- Net change	19	32	51
<b>3. Participants as of January 1, 2007</b>	<b>4,287</b>	<b>697</b>	<b>4,984</b>
- New Entrants/Rehires	275	-	275
- Terminated Nonvested	(150)	-	(150)
- Terminated Vested (Lump Sum Cashout)	(120)	-	(120)
- Retirement	(40)	40	-
- Death w/ Beneficiary	(2)	2	-
- Death w/o Beneficiary	-	(3)	(3)
- Net change	(37)	39	2
<b>4. Participants as of January 1, 2008</b>	<b>4,250</b>	<b>736</b>	<b>4,986</b>
- New Entrants/Rehires	200	-	200
- Terminated Nonvested	(170)	-	(170)
- Terminated Vested (Lump Sum Cashout)	(120)	-	(120)
- Retirement	(40)	40	-
- Death w/ Beneficiary	(2)	2	-
- Death w/o Beneficiary	-	(3)	(3)
- Net change	(132)	39	(93)
<b>5. Participants as of January 1, 2009</b>	<b>4,118</b>	<b>775</b>	<b>4,893</b>
- New Entrants/Rehires	230	-	230
- Terminated Nonvested	(100)	-	(100)
- Terminated Vested (Lump Sum Cashout)	(150)	-	(150)
- Retirement	(30)	30	-
- Death w/ Beneficiary	(1)	1	-
- Death w/o Beneficiary	-	(2)	(2)
- Net change	(51)	29	(22)
<b>6. Participants as of January 1, 2010</b>	<b>4,067</b>	<b>804</b>	<b>4,871</b>

**National Oil Full-Time Salaried Pension Plan  
Age/Svc/Earnings as of January 1, 2010**

Age (Years)	# Participants	Average Salary	Service (Years)					Totals
			< 5	5-10	10-15	15-20	>20	
< 25	100	43,000	54	-	-	-	154	46,500
25-35	310	53,500	150	101	66	-	627	62,000
35-45	195	67,600	200	153	210	198	956	80,400
45-55	210	72,000	150	120	320	720	1,520	84,200
55-65	164	67,000	70	50	90	410	784	82,400
> 65	4	53,000	3	5	10	4	26	60,000
Totals	983	61,400	627	429	696	1,332	4,067	78,000

Avg Age 48.5  
Avg Svc 18.7  
Avg Salary 78,000

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 precedes 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

	2005	2006	2007	2008	2009	2010
<b>Participant Summary</b>						
<b>1. Active Participants</b>						
(a) count	47	49	52	55	57	59
(b) average age	52.9	53.1	53.6	53.8	54.3	54.9
(c) average service	18.1	18.2	18.5	18.6	18.9	19.4
(d) average future working lifetime	6.5	6.3	6.1	6.0	5.9	5.7
(e) average future working lifetime to vesting (for those not)	N/A	N/A	N/A	N/A	N/A	2.0
(f) average plan earnings (prior year)	310,000	315,000	325,000	340,000	347,000	360,000
<b>2. Deferred Vested Participants</b>						
(a) count	-	-	-	-	-	-
<b>3. Pensioners (incl beneficiaries)</b>						
(a) count	14	15	17	19	21	23
(b) average age	67.6	67.2	66.6	66.1	65.7	66.1
(c) average annual benefit	12,900	13,100	14,000	14,500	15,000	15,300

**Expense Valuation Results (numbers in \$000's) \***

<b>1. Reconciliation of funded status at valuation date:</b>						
(a) Accumulated Benefit Obligation	(11,489)	(13,796)	(14,396)	(14,839)	(19,114)	(21,448)
(b) Projected Benefit Obligation						
(i) retirees / actives - fully vested	N/A	N/A	N/A	N/A	N/A	(35,746)
(ii) actives - not fully vested	N/A	N/A	N/A	N/A	N/A	(11,915)
(iii) total	(28,722)	(34,489)	(35,991)	(37,098)	(42,475)	(47,662)
(c) Fair Value of Assets	-	-	-	-	-	-
(d) Funded Status: (b) + (c)	(28,722)	(34,489)	(35,991)	(37,098)	(42,475)	(47,662)
(e) Unrecognized prior service costs	-	-	-	-	-	-
(f) Unrecognized (gains)/losses	4,930	7,826	5,809	3,547	5,750	7,219
(g) Prepaid/(Accrued) expense	(23,792)	(26,663)	N/A	N/A	N/A	N/A
<b>2. Pension Expense</b>						
(a) Service cost (beg. of year)	959	1,070	1,118	1,162	1,272	1,419
(b) Interest cost	1,775	1,950	2,127	2,287	2,506	2,690
(c) Expected ROA	-	-	-	-	-	-
(d) Amort of prior svc cost	-	-	-	-	-	-
(e) Amort of unrec (gain)/loss **	317	695	362	-	255	430
(f) Pension Expense for year	3,051	3,715	3,607	3,450	4,033	4,539
<b>3. Benefit Payments</b>	181	197	238	276	315	352
<b>4. Actuarial Basis</b>						
(a) Discount rate	6.00%	5.50%	5.75%	6.00%	5.75%	5.50%
(b) Return on assets	N/A	N/A	N/A	N/A	N/A	N/A
(c) Salary scale	3.75%	3.50%	3.50%	3.50%	3.50%	3.50%
(d) CPI	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
(e) All other assumptions	Same as for Full-time Salaried Pension Plan					

\* numbers may not add due to rounding

\*\* gains/losses exceeding 10% of the greater of the Projected Benefit Obligation and the Fair Value of Assets are amortized over the average future working lifetime of active participants

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	\$75 per month times years of service for terminations/ retirements during 2003, 2004, and 2005  \$80 per month times years of service for terminations/ retirements during 2006, 2007, 2008 and 2009  \$81 per month times years of service for terminations/ retirements during 2010 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 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**

	2005	2006	2007	2008	2009	2010
<b>Participant Summary - January 1</b>						
<i>Active Participants</i>						
(a) count	6,295	6,253	6,300	6,363	6,326	6,285
(b) average age	46.4	47.0	47.2	47.8	48.6	49.4
(c) average service	17.3	17.8	18.0	18.7	19.3	19.8
(d) average future working lifetime	10.7	10.6	10.8	10.2	10.5	10.3
(e) average future working lifetime to vesting (for those not)	N/A	N/A	N/A	N/A	N/A	3.4
(f) average plan earnings (prior year)	39,500	39,800	39,600	41,000	42,000	43,000
<i>Deferred Vested Participants</i>						
(a) count	-	-	-	-	-	-
<i>Pensioners (incl beneficiaries)</i>						
(a) count	1,034	1,060	1,083	1,088	1,103	1,130
(b) average age	71.2	70.8	70.2	70.4	71.4	71.9
(c) average annual benefit	10,000	10,800	11,200	11,300	11,400	11,500

**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	380,717	444,899	504,972	557,208	597,964	617,450
Employer Contributions during prior year	33,000	34,400	37,000	32,000	35,000	40,000
Benefit Payments during prior year	(11,340)	(12,000)	(15,000)	(16,000)	(16,000)	(17,000)
Expenses during prior year	-	-	-	-	-	-
Investment return during prior year	42,522	37,674	30,236	24,756	486	30,315
Market Value of Assets at January 1 of current year	444,899	504,972	557,208	597,964	617,450	670,766
Rate of return during prior year	11%	8%	6%	4%	0%	5%
<i>Average Portfolio Mix During Prior Year:</i>						
(a) Domestic Large Cap Equities	29%	30%	10%	8%	6%	8%
(b) Domestic Small Cap Equities	20%	21%	0%	0%	0%	0%
(c) Domestic Fixed Income	38%	36%	88%	90%	92%	89%
(d) International Equities	8%	9%	0%	0%	0%	0%
(e) Real Estate	2%	2%	0%	0%	0%	0%
(f) Cash	3%	2%	2%	2%	2%	3%
(g) Total	100%	100%	100%	100%	100%	100%
<i>Asset Class Returns during Prior Year:</i>						
(a) Domestic Large Cap Equities	15%	13%	23%	-2%	-30%	15%
(b) Domestic Small Cap Equities	14%	7%	18%	-4%	-40%	20%
(c) Domestic Fixed Income	7%	3%	4%	5%	2%	4%
(d) International Equities	12%	17%	10%	5%	-20%	6%
(e) Real Estate	3%	12%	8%	10%	3%	3%
(f) Cash	1%	2%	2%	2%	2%	2%

\* numbers may not add due to rounding

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

	2005	2006	2007	2008	2009	2010
<b>Funding Valuation - January 1 (numbers in \$000's) *</b>						
<b>1. Actuarial Accrued Liability:</b>						
<b>Active Multiplier</b>	\$ 75	\$ 80	\$ 80	\$ 80	\$ 80	\$ 81
(a) Active participants	380,324	455,351	523,917	540,906	582,597	631,117
(b) Deferred vested participants	-	-	-	-	-	-
(c) Pensioners	105,985	119,059	133,426	132,780	137,059	141,646
(d) Total	486,309	574,410	657,342	673,686	719,655	772,763
<b>2. Actuarial Value of Assets</b>	444,899	504,972	557,208	597,964	617,450	670,766
<b>3. Unfunded Actuarial Accrued Liability: (1d)-(2)</b>	41,411	69,438	100,134	75,721	102,205	101,997
<b>4. Normal Cost (beg. Of year)</b>	21,984	25,582	29,106	28,925	30,186	31,875
<b>5. Change in Unfunded AAL during prior year:</b>						
(a) Unfunded AAL at prior valuation date	49,374	41,411	69,438	100,134	75,721	102,205
(b) Adjustment for Interest	3,456	2,795	4,513	6,008	4,733	6,388
(c) Normal Cost w/interest less contributions	(13,043)	(12,093)	(10,958)	(2,107)	(5,360)	(9,177)
(d) (Gain)/Loss on investment	(15,114)	(6,887)	3,302	9,156	37,481	8,994
(e) (Gain)/Loss on termination	(6,000)	(5,000)	(3,000)	(11,000)	(10,000)	(12,500)
(f) (Gain)/Loss on salary increases less than expected	-	-	-	-	-	-
(g) (Gain)/Loss on mortality	(1,200)	(1,900)	500	750	800	700
(h) (Gain)/Loss on retirement	(750)	(550)	(300)	(6,000)	(1,000)	(2,000)
(i) (Gain)/Loss on assumption changes	24,200	23,400	37,500	(21,000)	-	-
(j) (Gain)/Loss on expenses	-	-	-	-	-	-
(k) (Gain)/Loss on all other factors	487	(197)	(861)	(220)	(169)	(404)
(l) Change in active benefit multiplier	-	28,459	-	-	-	7,792
(m) Unfunded AAL at current valuation date	41,411	69,438	100,134	75,721	102,205	101,997
<b>6. Actuarial Basis</b>						
(a) Interest	6.75%	6.50%	6.00%	6.25%	6.25%	6.25%
(b) Salary scale	N/A	N/A	N/A	N/A	N/A	N/A
(c) Consumer Price Index	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
(d) Mortality						
(e) Turnover						
(f) Retirement age						
(g) Proportion married and age difference						
(h) Expenses						
(i) Post-retirement indexing	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
(j) Asset Valuation Method						
(k) Actuarial Cost Method						

\* numbers may not add due to rounding

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

	2005	2006	2007	2008	2009	2010
<b>Expense Valuation - January 1 (numbers in \$000's) *</b>						
<b>1. Reconciliation of funded status at valuation date:</b>						
(active multiplier)	\$ 75	\$ 80	\$ 80	\$ 80	\$ 80	\$ 81
(a) Accumulated Benefit Obligation	(551,307)	(677,386)	(686,874)	(704,050)	(770,203)	(854,387)
(b) Projected Benefit Obligation						
(i) retirees / actives - fully vested	N/A	N/A	N/A	N/A	N/A	(811,668)
(ii) actives - not fully vested	N/A	N/A	N/A	N/A	N/A	(42,719)
(iii) total	(551,307)	(677,386)	(686,874)	(704,050)	(770,203)	(854,387)
(c) Fair Value of Assets	444,899	504,972	557,208	597,964	617,450	670,766
(d) Funded Status: (b) + (c)	(106,408)	(172,414)	(129,666)	(106,086)	(152,753)	(183,621)
(e) Unrecognized prior service costs	27,240	59,202	51,988	44,775	37,561	39,069
(f) Unrecognized (gains)/losses	59,924	98,779	59,600	30,683	74,944	96,355
(g) Prepaid/(Accrued) expense	(19,244)	(14,433)	N/A	N/A	N/A	N/A
<b>2. Pension Expense:</b>						
(a) Service Cost (beg. of year)	25,282	30,698	30,464	30,274	32,791	36,087
(b) Interest Cost	34,255	38,615	40,816	43,579	45,712	48,509
(c) Expected return on assets	(34,232)	(38,810)	(33,942)	(36,448)	(37,767)	(40,936)
(d) Amortization of prior service cost	3,837	7,214	7,214	7,214	7,214	8,061
(e) Amortization of net actuarial (gain)/loss **	448	2,928	-	-	-	1,060
(f) Pension Expense	29,589	40,644	44,551	44,620	47,950	52,781
<b>3. Actuarial Basis and Supplemental Data</b>						
(a) Discount rate	6.00%	5.50%	5.75%	6.00%	5.75%	5.50%
(b) Return on assets	7.50%	7.50%	6.00%	6.00%	6.00%	6.00%
(c) Salary scale	N/A	N/A	N/A	N/A	N/A	N/A
(d) Consumer Price Index	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
(e) Mortality			GAM83			
(f) Turnover			Based on NOC experience for 1986-1988			
(g) Retirement age			Age 62, with appropriate early retirement reduction, if any			
(h) Proportion married and age difference			80% married, male spouses 3 years older than female spouses			
(i) Expenses			Assume all expenses paid by company			
(j) Post-retirement indexing	1.00%	1.00%	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	34,400	37,000	32,000	35,000	40,000	40,000
(n) Benefit payments	(11,340)	(12,000)	(15,000)	(16,000)	(16,000)	(17,000)

\* numbers may not add due to rounding

\*\* gains/losses exceeding 10% of the greater of the Projected Benefit Obligation and the Fair Value of Assets are amortized over the average future working lifetime of active participants



**National Oil Full-Time Hourly Union Pension Plan  
Reconciliation of Plan Participants (2005 - 2010)**

	<u>Active</u>	<u>Pensioners/ Beneficiaries</u>	<u>Total</u>
<b>1. Participants as of January 1, 2005</b>	<b>6,295</b>	<b>1,034</b>	<b>7,329</b>
- New Entrants/Rehires	150	-	150
- Terminated Nonvested	(80)	-	(80)
- Terminated Vested (Lump Sum Cashout)	(75)	-	(75)
- Retirement	(35)	35	-
- Death w/ Beneficiary	(2)	2	-
- Death w/o Beneficiary	-	(11)	(11)
- Net change	(42)	26	(16)
<b>2. Participants as of January 1, 2006</b>	<b>6,253</b>	<b>1,060</b>	<b>7,313</b>
- New Entrants/Rehires	148	-	148
- Terminated Nonvested	(30)	-	(30)
- Terminated Vested (Lump Sum Cashout)	(40)	-	(40)
- Retirement	(30)	30	-
- Death w/ Beneficiary	(1)	1	-
- Death w/o Beneficiary	-	(8)	(8)
- Net change	47	23	70
<b>3. Participants as of January 1, 2007</b>	<b>6,300</b>	<b>1,083</b>	<b>7,383</b>
- New Entrants/Rehires	130	-	130
- Terminated Nonvested	(25)	-	(25)
- Terminated Vested (Lump Sum Cashout)	(30)	-	(30)
- Retirement	(10)	10	-
- Death w/ Beneficiary	(2)	1	(1)
- Death w/o Beneficiary	-	(6)	(6)
- Net change	63	5	68
<b>4. Participants as of January 1, 2008</b>	<b>6,363</b>	<b>1,088</b>	<b>7,451</b>
- New Entrants/Rehires	75	-	75
- Terminated Nonvested	(40)	-	(40)
- Terminated Vested (Lump Sum Cashout)	(50)	-	(50)
- Retirement	(20)	20	-
- Death w/ Beneficiary	(2)	1	(1)
- Death w/o Beneficiary	-	(6)	(6)
- Net change	(37)	15	(22)
<b>5. Participants as of January 1, 2009</b>	<b>6,326</b>	<b>1,103</b>	<b>7,429</b>
- New Entrants/Rehires	110	-	110
- Terminated Nonvested	(60)	-	(60)
- Terminated Vested (Lump Sum Cashout)	(60)	-	(60)
- Retirement	(30)	30	-
- Death w/ Beneficiary	(1)	1	-
- Death w/o Beneficiary	-	(4)	(4)
- Net change	(41)	27	(14)
<b>6. Participants as of January 1, 2010</b>	<b>6,285</b>	<b>1,130</b>	<b>7,415</b>

**National Oil Full-Time Hourly Union Pension Plan  
Age/Svc/Earnings as of January 1, 2010**

Age (Years)	# Participants	Average Salary	Service (Years)					Totals
			< 5	5-10	10-15	15-20	>20	
< 25	230	26,000	100	-	-	-	330	28,400
25-35	200	29,000	110	90	62	-	462	35,100
35-45	290	29,000	365	300	649	441	2,045	42,500
45-55	150	29,000	165	275	620	886	2,096	46,800
55-65	160	29,000	66	95	177	802	1,300	45,000
> 65	12	27,000	11	13	9	7	52	26,600
Totals	1,042	28,300	817	773	1,517	2,136	6,285	43,000
	Avg Age		49.4					
	Avg Svc		19.8					
	Avg Salary		43,000					

National Oil Part-Time DC Pension Plan

Eligibility	Immediate
Vesting	Immediate
Employee Contributions	Employee may defer between 1% to 20% of pay
Employer Contributions	3% of pay
Plan Fund Investment Options	The employer invests in funds elected by employee
Account Balance	Contributions are accumulated in member's individual account earning a rate of return based on the investments elected by the employee
Loans/Withdrawals	Not permitted.
Benefit on Termination or Retirement	Account balance is payable to employee upon termination or retirement. Employee has the option to leave the balance in the fund or withdraw entire balance immediately upon termination or retirement.
Benefit on Death	Account balance is payable to named beneficiary

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

	2005	2006	2007	2008	2009	2010
<b>Participant Summary</b>						
(a) number participating during prior year	6,300	6,250	6,500	6,600	6,500	6,400
(b) average age	30.5	30.9	28.9	28.5	28.9	29.3
(c) average pay	24,000	26,000	29,000	31,000	31,620	32,300

**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	42,861	50,608	57,560	63,069	66,220	65,632
Employee Contributions during prior year	7,560	8,125	9,425	10,230	10,277	10,336
Company Contributions during prior year	4,536	4,875	5,655	6,138	6,166	6,202
Benefit Payments during prior year	(13,230)	(13,125)	(13,650)	(13,860)	(13,650)	(13,440)
Expenses during prior year	-	-	-	-	-	-
Investment return during prior year	8,882	7,076	4,079	643	(3,381)	5,374
Market Value of Assets at January 1 of current year	50,608	57,560	63,069	66,220	65,632	74,104
Rate of return during prior year	21%	14%	7%	1%	-5%	8%

\* numbers may not add due to rounding

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

Eligibility	Immediate
Earliest Retirement Age	55 and 10 years of service
Retirement benefit	Retirees and their spouses may elect to participate in a self insured health plan, with 100% the of cost of the plan paid by the employer.
Pre-retirement / termination benefits	None
Spousal Coverage	Coverage continues for the life of the spouse after death of an eligible employee
Benefits Covered	\$0 deductible; \$0 copay No lifetime maximum Office visits Hospital visits  Surgery Prescription drugs
Life Insurance benefit	Effective January 1, 2010: introduced \$50,000 life insurance benefit payable upon death after retirement

Retiree Health and Welfare Program  
Historical Valuation Results

	2005	2006	2007	2008	2009	2010
<b>Expense Valuation Results - January 1 (numbers in \$000's) *</b>						
<b>1. Reconciliation of funded status at valuation date:</b>						
(a) Accumulated Postretirement Benefit Obligation						
(i) actives - fully vested	(646,104)	(734,147)	(775,708)	(816,512)	(915,361)	(724,363)
(ii) actives - not fully vested	N/A	N/A	N/A	N/A	N/A	(316,909)
(iii) retirees	(438,277)	(511,869)	(539,740)	(565,677)	(659,480)	(735,661)
(iv) total	(1,084,381)	(1,246,016)	(1,315,448)	(1,382,189)	(1,574,841)	(1,776,933)
(b) Fair Value of Assets	0	0	0	0	0	0
(c) Surplus: (a) + (b)	(1,084,381)	(1,246,016)	(1,315,448)	(1,382,189)	(1,574,841)	(1,776,933)
(d) Unrecognized prior service costs	0	0	0	0	0	20,000
(e) Unrecognized (gain)/loss	140,417	211,932	178,855	142,116	226,210	283,624
(f) Prepaid/(Accrued) expense	(943,964)	(1,034,083)	N/A	N/A	N/A	N/A
<b>2. Expense</b>						
(a) Service cost (beg. of year)	40,381	45,884	48,482	51,032	57,210	63,425
(b) Interest cost	66,883	70,449	77,650	85,153	92,923	100,340
(c) Expected ROA	0	0	0	0	0	0
(d) Amort of prior svc cost	0	0	0	0	0	2,682
(e) Amort of unrec (gain)/loss **	2,955	8,176	4,348	373	6,545	10,130
(f) Expense for year	110,219	124,510	130,479	136,559	156,678	176,577
3. Benefit Payments	20,100	22,000	27,000	28,000	32,000	32,000
4. Average Future Working Lifetime to Retirement	10.82	10.68	10.88	10.44	10.50	10.46
5. Average Future Working Lifetime to FEA	7.82	7.68	7.88	7.44	7.50	7.46
6. Average Future Working Lifetime to Fully Vested (for those not vested)	N/A	N/A	N/A	N/A	N/A	7.46
<b>7. Actuarial Assumptions:</b>						
(a) Discount rate	6.00%	5.50%	5.75%	6.00%	5.75%	5.50%
(b) Return on assets	N/A	N/A	N/A	N/A	N/A	N/A
(c) Medical trend						
Initial rate	6.00%	5.50%	6.00%	6.00%	6.00%	6.00%
Annual decrease	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Ultimate rate	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Year ultimate trend rate reached	2008	2008	2010	2011	2012	2013
(d) CPI	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
(e) Per capita claims cost	8,450	8,800	9,500	9,900	11,000	12,000
(f) Retirement assumption	Age 62 with 10 years of service					
(g) All other demographic assumptions	Same as those used for pension plans					

\* numbers may not add due to rounding

\*\* gains/losses exceeding 10% of the Accumulated Postretirement Benefit Obligation are amortized over the average future working lifetime of active participants