Case Study

2023

Design & Accounting Exam–Canada
EXAM RETDAC

RETDAC

Canadian Exam Case Study — Course DA Retirement

National Oil Company Background

National Oil Company (NOC) is a large, well-established company that services oil wells all over the country of Gevrey. NOC has been in existence for over 30 years and has approximately 3,000 full-time salaried and union hourly employees and up to a further 2,000 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 on 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 Gevrey. Although NOC is the largest player in the industry within Gevrey, 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 Gevrey Background

Gevrey 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:

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
- Plan sponsors have unconditional rights to a refund of surplus assets

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 Gevrey 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 Gevrey and there are no state-provided life or health care benefits.

For financial reporting purposes, Gevrey has adopted International Accounting Standard (IAS) 19, rev. 2011.

Gevrey has a well-developed investment market with substantial trading in government bonds, corporate bonds, and equities.

Summary of National Oil's Retirement Benefits

NOC maintains two retirement plans:

1. Pension Plan: final-average pay defined benefit ERP for its full-time employees;

2. Retiree Health Benefit Program: lifetime coverage for full-time employees retiring with the company.

Part-time and/or seasonal employees are not covered under either plan.

National Oil Pension Plan
Key Plan Provisions

Eligibility	Immediate
Vesting	100% after 5 years of service
Normal Retirement Age	65
Early Retirement Age	55 with 5 years of service
Earnings	Base pay, excluding overtime and bonuses
Best Average Earnings	Average annual earnings during 60 consecutive months in which earnings were highest
Benefit Service	One year credited for any calendar year in which 1,000 or more hours are worked; otherwise zero
Normal Retirement Benefit	2% of Best Average Earnings times years of Benefit Service, subject to tax system maximum
Early Retirement Benefit	Benefit calculated as under the Normal Retirement Benefit formula using Best Average Earnings and service as of date of calculation
	Normal Retirement Benefit reduced by 0.25% per month that early retirement precedes age 62
Form of Benefit	If married, 50% joint & survivor annuity 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 Normal Retirement Benefit
Pre-Retirement Death Benefit	Lump sum equal to actuarial present value of Normal Retirement Benefit payable to named beneficiary
Disability Benefit	None

National Oil Pension Plan
Demographic Summary as of January 1, 2023

Distribution by Age and Service

					Service (Years)			
			< 5	5-10	10-15	15-20	> 20	Totals
	< 25	# Participants	50	10	-	-	-	60
		Average Salary	50,000	57,000	-	-	-	51,200
	25-35	# Participants	400	140	20	-	-	560
		Average Salary	65,000	77,000	93,000	-	-	69,000
	35-45	# Participants	300	250	160	60	20	790
		Average Salary	76,000	92,000	101,000	103,000	108,000	89,000
Age	45-55	# Participants	180	160	150	130	220	840
(Years)		Average Salary	76,000	91,000	102,000	107,000	117,000	99,000
	55-65	# Participants	110	110	100	90	280	690
		Average Salary	74,000	87,000	95,000	102,000	116,000	99,800
	> 65	# Participants	20	30	30	20	60	160
		Average Salary	68,000	85,000	95,000	103,000	118,000	99,400
	Totals	# Participants	1,060	700	460	300	580	3,100
		Average Salary	70,300	87,200	99,300	104,400	116,300	90,300

Average Age	46.7
Average Service	10.7
Average Salary	90,300

Reconciliation of Plan Participants

	Actives	Pensioners/ Beneficiaries	Total
Participants as of January 1, 2022	**3,200**	**1,830**	**5,030**
- New entrants/rehires	230	-	230
- Nonvested terminations	(120)	-	(120)
- Vested terminations (lump sum cashout)	(50)	-	(50)
- Retirements	(140)	140	-
- Deaths	(20)	(70)	(90)
- New beneficiaries	-	20	20
- Net change	(100)	90	(10)
Participants as of January 1, 2023	**3,100**	**1,920**	**5,020**

National Oil Pension Plan
Historical Actuarial Valuation Results

	2022	2023
Participant Summary – January 1		
Active Participants		
(a) count	3,200	3,100
(b) average age	46.9	46.7
(c) average service	10.8	10.7
(d) average future working lifetime	12.1	12.2
(e) average future working lifetime to vesting (for those not)	2.4	2.5
(f) average plan earnings (prior year)	89,100	90,300
Deferred Vested Participants		
(a) count	-	-
Pensioners (including beneficiaries)		
(a) count	1,830	1,920
(b) average age	66.7	66.8
(c) average annual benefit	22,813	22,785
Duration of plan liabilities	12.9	12.7

	2022	2023
Plan Assets (numbers in $000's) *		
Change in Plan Assets during Prior Year		
(a) Market Value of Assets at January 1 of prior year	696,839	770,608
(b) Employer Contributions during prior year	35,850	37,590
(c) Benefit Payments during prior year	(39,900)	(41,750)
(d) Expenses during prior year	-	-
(e) Investment return during prior year	77,819	(85,383)
(f) Market Value of Assets at January 1 of current year	770,608	681,064
(g) Rate of return during prior year	11.20%	-11.11%
Average Portfolio Mix During Prior Year		
(a) Domestic Large Cap Equities	25%	23%
(b) Domestic Small Cap Equities	15%	13%
(c) Fixed Income	40%	42%
(d) International Equities	10%	11%
(e) Real Estate	7%	8%
(f) Cash	3%	3%
(g) Total	100%	100%
Duration of Domestic Fixed Income	9.0	8.5
Asset Class Returns during Prior Year		
(a) Domestic Large Cap Equities	20%	-12%
(b) Domestic Small Cap Equities	25%	-12%
(c) Fixed Income	2%	-10%
(d) International Equities	13%	-18%
(e) Real Estate	5%	-8%
(f) Cash	0%	1%

numbers may not add due to rounding

National Oil Pension Plan
Historical Actuarial Valuation Results

	2022	2023
Expense Valuation – January 1 (numbers in $000's) *		
1. Funded Status and Deferred Costs		
(a) Defined Benefit Obligation (DBO)		
(i) Vested	(1,093,103)	(915,241)
(ii) Non-vested	(53,910)	(46,147)
(iii) Total	(1,147,013)	(961,387)
(b) Fair Value of Assets	770,608	681,064
(c) Funded Status: (a)(iii) + (b)	(376,405)	(280,323)
2. Defined Benefit Cost Recognized in Profit or Loss		
(a) Service Cost (beginning of year)	57,280	43,561
(b) Interest Cost (net)	17,633	16,991
(c) Defined Benefit Cost Recognized in Profit or Loss	74,913	60,552
[All plan administrative expenses are paid and accounted for outside of the plan fund]		
3. Actuarial Basis and Supplemental Data		
(a) Discount rate	4.25%	5.75%
(b) Return on assets	6.50%	6.75%
(c) Mortality	CPM-2014	CPM-2014
(d) Salary scale	3.00%	3.25%
(e) Inflation	2.50%	2.75%
(f) Turnover	NOC experience during period 2000-05	
(g) Proportion married and age difference	80% married; male spouses 3 years older than female spouses	
(h) Retirement age	Age 62	
(i) Expenses	Assume all expenses paid by company	
(j) Asset valuation method	Market value	
(k) Actuarial cost method	Projected Unit Credit	
(l) Expected employer contributions	37,585	56,780
(m) Expected benefit payments	(41,750)	(43,750)

numbers may not add due to rounding

National Oil Retiree Health Benefit Program
Key Plan Provisions

Eligibility	Immediate
Earliest Retirement Age	55 with 10 years of service
Retirement benefit	Retirees and their spouses may elect to participate in a self-insured health plan with 100% of the plan cost paid by the employer
Pre-retirement / termination benefits	None
Spousal coverage	Coverage continues for the life of the spouse after death of an eligible retiree
Cost sharing	$0 deductible $0 copay No coinsurance No lifetime maximum
Benefits covered	Office visits Hospital visits Surgery Prescription drugs
Life Insurance benefit	$50,000 payable upon death after retirement

National Oil Retiree Health Benefit Program
Historical Valuation Results

	2022	2023
Expense Valuation Results – January 1 (numbers in $000's) *		
1. Funded Status and Deferred Costs		
(a) Defined Benefit Obligation		
(i) actives - fully vested	(454,679)	(330,916)
(ii) actives - not fully vested	(213,967)	(162,988)
(iii) retirees	(838,754)	(831,748)
(iv) total	(1,507,400)	(1,325,652)
(b) Fair Value of Assets	-	-
(c) Funded Status: (a)(iv) + (b)	(1,507,400)	(1,325,652)
2. Defined Benefit Cost Recognized in Profit or Loss		
(a) Service Cost (beginning of year)	61,912	46,159
(b) Interest Cost	66,122	78,006
(c) Defined Benefit Cost Recognized in Profit or Loss	128,034	124,165
[All plan administrative and claims expenses are included in the claims costs used to determine the plan liability]		
3. Expected benefit payments	(26,980)	(30,380)
4. Duration of plan liabilities	17.6	16.1
5. Actuarial Assumptions and Supplemental Information		
(a) Discount rate	4.25%	5.75%
(b) Return on assets	N/A	N/A
(c) Medical trend		
– Initial rate	4.75%	6.25%
– Annual decrease	0.25%	0.25%
– Ultimate rate	4.50%	4.75%
– Year ultimate trend rate reached	2023	2029
(d) CPI	2.50%	2.75%
(e) Per capita claims cost *(not in $000's)*	17,000	18,100
(f) Retirement assumption	Age 62 with 10 years of service	
(g) All other demographic assumptions	Same as those used for Pension Plan	

numbers may not add due to rounding