EXERCISE 20-1 (5-10 minutes)

(a) Computation of pension expense:

- Service cost $60,000
- Interest cost ($500,000 \times 0.10) 50,000
- Actual (expected) return on plan assets (12,000)
- Unrecognized prior service cost amortization 8,000
- Pension expense for 2004 $106,000

(b) Pension Expense ................................................................. 106,000

- Cash .................................................................................. 95,000
- Prepaid/Accrued Pension Cost ........................................... 11,000

EXERCISE 20-6 (10-15 minutes)

Computation of Actual Return on Plan Assets

- Fair value of plan assets at 12/31/05 $2,725,000
- Fair value of plan assets at 1/1/05 2,300,000
- Increase in fair value of plan assets 425,000
- Deduct: Contributions to plan during 2005 $250,000
- Less benefits paid during 2005 350,000
- Actual return on plan assets for 2005 $525,000

EXERCISE 20-8 (20-25 minutes)

Corridor and Minimum Loss Amortization

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Benefit Obligation (a)</th>
<th>Plan Asset Value (a)</th>
<th>10% Corridor</th>
<th>Cumulative Unrecognized Net Loss (a)</th>
<th>Minimum Amortization of Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>$2,000,000</td>
<td>$1,900,000</td>
<td>$200,000</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>2004</td>
<td>2,400,000</td>
<td>2,500,000</td>
<td>250,000</td>
<td>280,000</td>
<td>3,000 (b)</td>
</tr>
<tr>
<td>2005</td>
<td>2,900,000</td>
<td>2,600,000</td>
<td>290,000</td>
<td>367,000 (c)</td>
<td>6,417 (d)</td>
</tr>
<tr>
<td>2006</td>
<td>3,600,000</td>
<td>3,000,000</td>
<td>360,000</td>
<td>370,583 (e)</td>
<td>882 (f)</td>
</tr>
</tbody>
</table>

(a) As of the beginning of the year.
(b) \( \frac{($280,000 - $250,000)}{10} = $3,000 \)
(c) \( $280,000 - $3,000 + $90,000 = $367,000 \)
(d) \( \frac{($367,000 - $290,000)}{12} = $6,417 \)
(e) \( $367,000 - $6,417 + $10,000 = $370,583 \)
(f) \( \frac{($370,583 - $360,000)}{12} = $882 \)
**EXERCISE 20-11 (10-15 minutes)**

(a) Additional Liability Computations

<table>
<thead>
<tr>
<th></th>
<th>December 31</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
</tr>
<tr>
<td>Accumulated benefit obligation</td>
<td>$(260,000)</td>
</tr>
<tr>
<td>Fair value plan of assets</td>
<td>255,000</td>
</tr>
<tr>
<td>Minimum liability</td>
<td>(5,000)</td>
</tr>
<tr>
<td>Prepaid (accrued) pension cost</td>
<td>30,000</td>
</tr>
<tr>
<td>Additional liability to report</td>
<td>(35,000)</td>
</tr>
<tr>
<td>Less: Beginning additional liability</td>
<td>—</td>
</tr>
<tr>
<td>Additional liability to record</td>
<td>$ (35,000)</td>
</tr>
</tbody>
</table>

(b) 2004

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intangible Asset—Deferred Pension Cost</td>
<td>35,000</td>
</tr>
<tr>
<td>Additional Pension Liability</td>
<td>35,000</td>
</tr>
</tbody>
</table>

2005

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Pension Liability</td>
<td>10,000</td>
</tr>
<tr>
<td>Intangible Asset—Deferred Pension Cost</td>
<td>10,000</td>
</tr>
</tbody>
</table>

**EXERCISE 20-12 (20-30 minutes)**

(a) Pension expense for 2004 composed of the following:

- Service cost $56,000
- Interest on projected benefit obligation 90,000
  - (9% X $1,000,000)
- Actual and expected return on plan assets (54,000)
- Amortization of unrecognized gain or loss 0
- Amortization of unrecognized prior service cost 40,000

Pension expense $132,000

(b) Pension Expense 132,000

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepaid/Accrued Pension Cost</td>
<td>13,000*</td>
</tr>
<tr>
<td>Cash</td>
<td>145,000</td>
</tr>
</tbody>
</table>

(To record pension expense and employer’s contribution)

*$145,000 – $132,000
EXERCISE 20-12 (Continued)

(c) Income Statement:

Pension expense $132,000

Balance Sheet:

Assets

Intangible asset—deferred pension cost $44,000

Liabilities

Accrued pension cost $31,000

Minimum liability computation: 12/31/04

Accumulated benefit obligation $(830,000)
Plan assets at fair value $799,000\(^a\)
Minimum liability $ (31,000)
Prepaid/accrued pension cost (an asset) 13,000
Additional liability (44,000)
Unrecognized prior service cost 360,000\(^b\)
Contra equity charge $ 0

\(^a\)$799,000 = $600,000 + $145,000 + $54,000
\(^b\)$360,000 = $400,000 – $40,000
EXERCISE 20-14 (35-45 minutes)
(a) Actual Return = (Ending – Beginning) – (Contributions – Benefits)
   Fair value of plan assets,
   December 31, 2005 $2,620
   Deduct: Fair value of plan assets,
   January 1, 2005 1,700
   Increase in fair value of plan assets 920
   Deduct: Contributions $800
   Less benefits paid 200 600
   Actual return on plan assets in 2005 $320

(b) Computation of pension liability gains and losses and pension asset gains and losses.
1. Difference between 12/31/05 actuarially computed PBO and 12/31/05 recorded projected benefit obligation (PBO):
   PBO at end of year $3,645
   PBO per memo records:
   1/1/05 PBO $2,800
   Add interest (10%) 280
   Add service cost 400
   Less benefit payments (200) 3,280
   Liability loss $365
2. Difference between actual fair value of plan assets and expected fair value:
   12/31/05 actual fair value of plan assets 2,620
   Expected fair value
   1/1/05 fair value of plan assets 1,700
   Add expected return ($1,700 X 10%) 170
   Add contribution 800
   Less benefits paid (200) 2,470
   Asset gain (150)
   Unrecognized net (gain) or loss $215
(c) Because no unrecognized net gain or loss existed at the beginning of the period, no amortization occurs. Therefore, the corridor calculation is not needed. An example of how the corridor would have been computed is illustrated below, assuming an unrecognized net loss of $240.

<table>
<thead>
<tr>
<th>Year</th>
<th>PBO</th>
<th>Plan Assets (FV)</th>
<th>10% Corridor</th>
<th>Unrecognized Net Loss</th>
<th>Amortization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$2,800</td>
<td>$1,700</td>
<td>$280</td>
<td>$240</td>
<td>–0–</td>
</tr>
</tbody>
</table>

(d) Prior service cost amortization: $1,100 X 1/20 = $55 per year.

(e) Minimum liability computation:

- Accumulated benefit obligation, 12/31/05: $(2,730)
- Plan assets at fair value: 2,620
- Minimum liability: (110)
- Prepaid pension cost, 12/31/05: 235
- Additional liability: $(345)

(f) Pension expense for 2005:

- Service cost: $400
- Interest cost ($2,800 X 10%): 280
- Actual return on plan assets [from (a)]: (320)
- Unexpected gain [from (b)2.]: 150
- Amortization of prior service cost: 55
- Pension expense for 2005: $565

(g) Reconciliation schedule:

- Projected benefit obligation: $(3,645)
- Fair value of plan assets: 2,620
- Funded status: (1,025)
- Unrecognized prior service cost: 1,045
- Unrecognized net (gain) or loss: 215
- Prepaid/accrued pension cost: 235
- Adjustment required to recognize minimum liability: $(345)
- Accrued pension cost recognized in the balance sheet: $(110)
EXERCISE 20-20 (25-35 minutes)

The excess of the cumulative unrecognized net gain or loss over the corridor amount is amortized by dividing the excess by the average remaining service period of employees. The average remaining service period is computed as follows:

\[
\frac{\text{Expected future years of service}}{\text{Number of employees}} = \text{Average remaining service life per employee}
\]

Average remaining service life per employee = \(\frac{5,600}{400} = 14\).

**Amortization of Unrecognized Net (Gain) or Loss**

(Gain) or Loss For the Year Ended December 31, Amount

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Benefit Obligation (a)</th>
<th>Plan Assets (a)</th>
<th>Corridor (b)</th>
<th>Cumulative Unrecognized (Gain) Loss (a)</th>
<th>Minimum Amortization of (Gain) Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>$4,000,000</td>
<td>$2,400,000</td>
<td>$400,000</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>2005</td>
<td>4,520,000</td>
<td>2,200,000</td>
<td>452,000</td>
<td>300,000</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>4,980,000</td>
<td>2,600,000</td>
<td>498,000</td>
<td>780,000</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>4,250,000</td>
<td>3,040,000</td>
<td>425,000</td>
<td>549,857</td>
<td>20,143 (c)</td>
</tr>
</tbody>
</table>

(a) As of the beginning of the year.
(b) The corridor is 10 percent of the greater of projected benefit obligation or plan assets.
(c) \$780,000 – \$498,000 = \$282,000; \$282,000/14 = \$20,143.
(d) \$780,000 – \$20,143 – \$210,000 = \$549,857.
(e) \$549,857 – \$425,000 = \$124,857; \$124,857/14 = \$8,918.
EXERCISE 20-21 (30-40 minutes)

(a)  

<table>
<thead>
<tr>
<th>Year</th>
<th>Unrecognized Prior Service Cost</th>
<th>Amortized</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>$110,000</td>
<td>($1,155,000 ÷ 10.5 years)</td>
</tr>
<tr>
<td>2005</td>
<td>110,000</td>
<td>($1,155,000 ÷ 10.5 years)</td>
</tr>
</tbody>
</table>

(b) The excess of the cumulative unrecognized net gain or loss over the corridor amount is amortized by dividing the excess by the average remaining service life per employee. The average service life is 10.5 years.

<p>| Amortization of Unrecognized Net (Gain) or Loss | Year Ended December 31, |</p>
<table>
<thead>
<tr>
<th>(Gain) or Loss</th>
<th>Amount</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>$101,000</td>
<td>(24,000)</td>
</tr>
<tr>
<td>2005</td>
<td>365,000</td>
<td>101,000</td>
</tr>
</tbody>
</table>

(a) As of the beginning of the year.
(b) The corridor is 10 percent of the greater of the projected benefit obligation or plan assets.
(c) $365,000 is greater than $101,000; therefore, no amortization.

(c) Pension expense for 2004 composed of the following:

- Service cost
  
- Interest on projected benefit obligation
  
- Expected return on plan assets
  
- Amortization of unrecognized net gain or loss
  
- Amortization of unrecognized prior service cost
  
  Pension expense $648,000

Pension expense for 2005 composed of the following:

- Service cost
  
- Interest on projected benefit obligation
  
- Expected return on plan assets
  
- Amortization of unrecognized prior service cost
  
  Pension expense $587,000

20-7
**EXERCISE 20-23 (10-12 minutes)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service cost</td>
<td>$ 90,000</td>
</tr>
<tr>
<td>Interest on accumulated postretirement benefit obligation</td>
<td>72,900</td>
</tr>
<tr>
<td>(9% X $810,000)</td>
<td></td>
</tr>
<tr>
<td>Expected return on plan assets</td>
<td>(62,000)</td>
</tr>
<tr>
<td>Amortization of prior service cost</td>
<td>3,000</td>
</tr>
<tr>
<td>Amortization of transition amount</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Postretirement expense</strong></td>
<td><strong>$108,900</strong></td>
</tr>
</tbody>
</table>

**EXERCISE 20-25 (10-15 minutes)**

(a) Accumulated postretirement benefit obligation
- (Credit) $(950,000)
- Plan assets at fair value (Debit) 650,000
- Funded status (Credit) (300,000)
- Unrecognized prior service cost (Debit) 60,000
- Unrecognized transition amount (Debit) 100,000
- Accrued postretirement benefit cost (Credit) $(140,000)

(b) Accumulated postretirement benefit obligation
- (Credit) $(950,000)
- Plan assets at fair value (Debit) 650,000
- Funded status (Credit) (300,000)
- Unrecognized prior service cost (Debit) 60,000
- Unrecognized transition amount (Debit) 100,000
- Unrecognized loss (Debit) 20,000
- Accrued postretirement benefit cost (Credit) $(120,000)
<table>
<thead>
<tr>
<th>Items</th>
<th>Annual Post-retirement Expense</th>
<th>Prepaid/ Accrued Post-retirement Cost</th>
<th>Accumulated Postretirement Benefit Obligation</th>
<th>Plan Assets</th>
<th>Unrecognized Transition Amount</th>
<th>Unrecognized Prior Service Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance, Jan. 1, 2005</td>
<td>0</td>
<td></td>
<td>810,000 Cr.</td>
<td>710,000 Dr.</td>
<td>80,000 Cr.</td>
<td>20,000 Dr.</td>
</tr>
<tr>
<td>(a) Service cost</td>
<td>90,000 Dr.</td>
<td></td>
<td>90,000 Cr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Interest cost</td>
<td>*72,900 Dr.</td>
<td></td>
<td>72,900 Cr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Actual return</td>
<td>62,000 Cr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Contributions</td>
<td>16,000 Cr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Benefits</td>
<td>40,000 Dr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) Amortization:</td>
<td>5,000 Dr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transition</td>
<td>5,000 Cr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior service cost</td>
<td>3,000 Dr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal entry for 2005</td>
<td>108,900 Dr.</td>
<td>16,000 Cr.</td>
<td>92,900 Cr.</td>
<td>932,900 Cr.</td>
<td>748,000 Dr.</td>
<td>75,000 Dr.</td>
</tr>
<tr>
<td>Balance, Dec. 31, 2005</td>
<td>92,900 Cr.</td>
<td></td>
<td>932,900 Cr.</td>
<td>748,000 Dr.</td>
<td>75,000 Dr.</td>
<td>17,000 Dr.</td>
</tr>
</tbody>
</table>

*($710,000 \times 9\%)
CASE 20-5

1. This situation can exist because companies vary as to whether they are using an implicit or explicit set of assumptions when interest rates are disclosed. In the implicit approach, two or more assumptions do not individually represent the best estimate of the plan’s future experience with respect to these assumptions, but the aggregate effect of their combined use is presumed to be approximately the same as that of an explicit approach. In the explicit approach, each significant assumption reflecting the best estimate of the plan’s future experience solely with respect to that assumption must be stated. As a result, some companies are presently using an implicit approach, others an explicit approach. FASB Statement No. 87 requires the use of explicit assumptions. As a result, this large variance in interest rates will probably disappear to some extent. However, it should be noted that companies will have some leeway in establishing settlement rates. In addition, the expected return on assets will also be different among companies.

2. This situation will occur because of the minimum liability required to be reported. That is, companies are required to report as a liability the excess of their accumulated benefit obligation over the fair value of plan assets. In the past, the basic liability companies reported was the excess of the amount expensed over the amount funded.

3. This statement is questionable. If a financial measure purports to represent a phenomenon that is volatile, the measure must show that volatility or it will not be representationally faithful. Nevertheless, many argue that volatility is inappropriate when dealing with such long-term measures as pensions. A good example of where dampening might be useful is the recognition of gains and losses. If assumptions prove to be accurate estimates of experience over a number of years, gains or losses in one year will be offset by losses or gains in subsequent periods, and amortization of unrecognized gains and losses would be unnecessary. The main point is that volatility per se should not be considered undesirable when establishing accounting principles. Although some managements may consider volatility bad, this belief should not influence standard-setting. However, it is clear from some of the compromises made in FASB Statement No. 87 that certain procedures were provided to dampen the volatility effect.

4. These pension plan assets in excess of the projected benefit obligation are not reported on the employer’s books. However, the fair value of plan assets are required to be reported in the footnote, so that a reader of the financial statements can determine the funded status of the plan.

5. (a) In a defined contribution plan, the amount contributed is the amount expensed. No significant reporting problems exist here. On the other hand, defined benefit plans involve many difficult reporting issues which may lead to additional expense and liability recognition.

Significant amendments will generally increase prior service cost which may lead to significant adjustments to pension expense in the future.

(b) Plan participants are of importance, because the expected future years of service computation can have an impact on the amortization of the transition amount, prior service cost, and gains and losses.

(c) If the plan is underfunded, pension expense will generally increase (all other factors constant). If the plan is overfunded, pension expense will generally decrease (all
other factors constant). The reason is that the expected return on plan assets will be less if the plan is underfunded and vice versa.

(d) If the company is using an actuarial funding method different than the one prescribed in FASB Statement No. 87 (benefits/years-of-service approach), some changes in the computation of pension expense will occur for the company.

6. The corridor method is an approach which requires that only gains and losses in excess of 10% of the greater of the projected benefit obligation or plan assets be allocated. This excess is then amortized over the average remaining service period of current employees expected to participate in the plan.

The corridor’s purpose is to only recognize gains and losses above a certain amount, on the theory that gains and losses within the corridor will offset one another over time.

7. This intangible asset is established on the basis that the plan amendment may reduce employee turnover, improve productivity, reduce demands for increases in cash compensation, and improve prospects for attracting additional qualified employees. This intangible asset arises when the accumulated benefit obligation exceeds the fair value of plan assets and the company has unrecognized prior service cost. The asset is not amortized, but instead is adjusted upward, downward, or eliminated based on the facts at each year end.

8. This disclosure was eliminated because of cost/benefit considerations. Many companies complained that this disclosure was: (1) difficult to compute, (2) of limited benefit to users, and (3) costly to prepare. Apparently the Board was sympathetic with this view and eliminated this disclosure from the final pronouncement on pensions.

**CASE 20-7**

While Selma may be correct in assuming that the termination of nonvested employees would decrease its pension-related liabilities and associated expenses, she is callous to suggest that firing employees is a reasonable approach to correcting the underfunding of College Electronix’s pension plan. Arbitrarily dismissing productive employees on the basis of being vested or not vested in the pension plan in order to avoid capitalizing a liability and recognizing expenses is a capricious and unsound business decision.

Richard Nye should discuss the ethical, legal, and financial implications of the alternatives available as well as the accounting requirements relating to this situation. This obligation and its effect on the financial statements should have been known to Cardinal Technology when it performed its due diligence audit of CE at the time of merger negotiations. Cardinal Technology should capitalize the pension obligations of CE as required by GAAP.