Statement of Financial Accounting Standards No. 143

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Accounting for Asset Retirement Obligations

June 2001

Financial Accounting Standards Board
of the Financial Accounting Foundation
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FAS 143: Accounting for Asset Retirement Obligations

FAS 143 Summary

This Statement addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. This Statement applies to all entities. It applies to legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction, development and (or) the normal operation of a long-lived asset, except for certain obligations of lessees. As used in this Statement, a legal obligation is an obligation that a party is required to settle as a result of an existing or enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel. This Statement amends FASB Statement No. 19, *Financial Accounting and Reporting by Oil and Gas Producing Companies.*

Reasons for Issuing This Statement

The Board decided to address the accounting and reporting for asset retirement obligations because:

- Users of financial statements indicated that the diverse accounting practices that have developed for obligations associated with the retirement of tangible long-lived assets make it difficult to compare the financial position and results of operations of companies that have similar obligations but account for them differently.
- Obligations that meet the definition of a liability were not being recognized when those liabilities were incurred or the recognized liability was not consistently measured or presented.

Differences between This Statement, Statement 19, and Existing Practice

This Statement requires that the fair value of a liability for an asset retirement obligation be recognized in the period in which it is incurred if a reasonable estimate of fair value can be made. The associated asset retirement costs are capitalized as part of the carrying amount of the long-lived asset. This Statement differs from Statement 19 and current practice in several significant respects.

- Under Statement 19 and most current practice, an amount for an asset retirement obligation

was recognized using a cost-accumulation measurement approach. Under this Statement, the amount initially recognized is measured at fair value.

- Under Statement 19 and most current practice, amounts for retirement obligations were not discounted and therefore no accretion expense was recorded in subsequent periods. Under this Statement, the liability is discounted and accretion expense is recognized using the credit-adjusted risk-free interest rate in effect when the liability was initially recognized.
- Under Statement 19, dismantlement and restoration costs were taken into account in determining amortization and depreciation rates. Consequently, many entities recognized asset retirement obligations as a contra-asset. Under this Statement, those obligations are recognized as a liability. Also, under Statement 19 the obligation was recognized over the useful life of the related asset. Under this Statement, the obligation is recognized when the liability is incurred.

Some current practice views a retirement obligation as a contingent liability and applies FASB Statement No. 5, *Accounting for Contingencies,* in determining when to recognize a liability. The measurement objective in this Statement is fair value, which is not compatible with a Statement 5 approach. A fair value measurement accommodates uncertainty in the amount and timing of settlement of the liability, whereas under Statement 5 the recognition decision is based on the level of uncertainty.

This Statement contains disclosure requirements that provide descriptions of asset retirement obligations and reconciliations of changes in the components of those obligations.

How the Changes in This Statement Improve Financial Reporting

Because all asset retirement obligations that fall within the scope of this Statement and their related asset retirement cost will be accounted for consistently, financial statements of different entities will be more comparable. Also,

- Retirement obligations will be recognized when they are incurred and displayed as liabilities. Thus, more information about future cash outflows, leverage, and liquidity will be provided. Also, an initial measurement at fair value will provide relevant information about the liability.
- Because the asset retirement cost is capitalized as part of the asset's carrying amount and subsequently allocated to expense over the asset's useful life, information about the gross investment in long-lived assets will be provided.
- Disclosure requirements contained in this Statement will provide more information about asset retirement obligations.

How the Statement Generally Changes Financial Statements

Because of diverse practice in current accounting for asset retirement obligations, various industries and entities will be affected differently. This Statement will likely have the following effects on current accounting practice:

- Total liabilities generally will increase because more retirement obligations will be

recognized. For some entities, obligations will be recognized earlier, and they will be displayed as liabilities rather than as contra-assets. In certain cases, the amount of a recognized liability may be lower than that recognized in current practice because a fair value measurement entails discounting.

- The recognized cost of assets will increase because asset retirement costs will be added to the carrying amount of the long-lived asset. Assets also will increase because assets acquired with an existing retirement obligation will be displayed on a gross rather than on a net basis.
- The amount of expense (accretion expense plus depreciation expense) will be higher in the later years of an asset's life than in earlier years.

How the Conclusions in the Statement Relate to the Conceptual Framework

The Board concluded that all retirement obligations within the scope of this Statement that meet the definition of a liability in FASB Concepts Statement No. 6, *Elements of Financial Statements,* should be recognized as a liability when the recognition criteria in FASB Concepts Statement No. 5, *Recognition and Measurement in Financial Statements of Business Enterprises,* are met.

The Board also decided that the liability for an asset retirement obligation should be initially recognized at its estimated fair value as discussed in FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements*.

Effective Date

This Statement is effective for financial statements issued for fiscal years beginning after June 15, 2002. Earlier application is encouraged.

INTRODUCTION

1. Diverse accounting practices have developed for obligations associated with the retirement of tangible long-lived assets. Some entities accrue those obligations ratably over the useful life of the related asset, either as an element of depreciation expense (and accumulated depreciation) or as a liability. Other entities do not recognize liabilities for those obligations until an asset is retired. This Statement establishes accounting standards for recognition and measurement of a liability for an asset retirement obligation and the associated asset retirement cost. [1]

STANDARDS OF FINANCIAL ACCOUNTING AND REPORTING

Scope

2. This Statement applies to all entities. This Statement applies to legal obligations associated with the *retirement* [2] of a tangible long-lived asset that result from the acquisition, construction, or development and (or) the normal operation of a long-lived asset, except as explained in paragraph 17 for certain obligations of lessees. As used in this Statement, a legal obligation is an obligation that a party is required to settle as a result of an existing or enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel. [3] This Statement does not apply to obligations that arise solely from a plan to dispose of a long-lived asset as that phrase is used in paragraph 15 of FASB Statement No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*. An obligation that results from the improper operation of an asset also is not within the scope of this Statement but may be subject to the provisions of AICPA Statement of Position 96-1, *Environmental Remediation Liabilities.*

Initial Recognition and Measurement of a Liability for an Asset Retirement Obligation

3. An entity shall recognize the fair value of a liability for an asset retirement obligation in the period in which it is incurred if a reasonable estimate of fair value can be made. [4] If a reasonable estimate of fair value cannot be made in the period the asset retirement obligation is incurred, the liability shall be recognized when a reasonable estimate of fair value can be made.

4. Paragraph 35 of FASB Concepts Statement No. 6, *Elements of Financial Statements,* defines a liability as follows:

> Liabilities are probable [21] future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events. [Footnote 22 omitted.]

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[21] *Probable* is used with its usual general meaning, rather than in a specific accounting or technical sense (such as that in Statement 5, par. 3), and refers to that which can reasonably be expected or believed on the basis of available evidence or logic but is neither certain nor proved (*Webster's New World Dictionary*, p. 1132). Its inclusion in the definition is intended to acknowledge that business and other economic activities occur in an environment characterized by uncertainty in which few outcomes are certain (pars. 44–48).

5. As stated in the above footnote, the definition of a liability in Concepts Statement 6 uses the term *probable* in a different sense than it is used in FASB Statement No. 5, *Accounting for Contingencies*. As used in Statement 5, probable requires a high degree of expectation. The term probable in the definition of a liability, however, is intended to acknowledge that business and other economic activities occur in an environment in which few outcomes are certain.

6. Statement 5 and FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements,* deal with uncertainty in different ways. Statement 5 deals with uncertainty about whether a loss has been incurred by setting forth criteria to determine when to *recognize* a loss contingency. Concepts Statement 7 addresses measurement of liabilities and provides a *measurement* technique to deal with uncertainties about the amount and timing of the future cash flows necessary to settle the liability. Paragraphs 55–61 of Concepts Statement 7 [5] discuss, in detail, the relationship between the fair value measurement objective and expected cash flow approach that is articulated in Concepts Statement 7 and accounting for contingencies under Statement 5. The guidance in Statement 5 and FASB Interpretation No. 14, *Reasonable Estimation of the Amount of a Loss,* are not applicable to a liability for which the objective is to measure that liability at fair value. That is because in Statement 5 uncertainty is used to decide whether to recognize a liability, whereas in Concepts Statement 7 uncertainties in the amount and timing of settlement are incorporated into the fair value measurement of the recognized liability. This Statement requires that all asset retirement obligations within the scope of this Statement be recognized when a reasonable estimate of fair value can be made.

7. The fair value of a liability for an asset retirement obligation is the amount at which that liability could be settled in a current transaction between willing parties, that is, other than in a forced or liquidation transaction. Quoted market prices in active markets are the best evidence of fair value and shall be used as the basis for the measurement, if available. If quoted market prices are not available, the estimate of fair value shall be based on the best information available in the circumstances, including prices for similar liabilities and the results of present value (or other valuation) techniques.

8. A present value technique [6] is often the best available technique with which to estimate the fair value of a liability. If a present value technique is used to estimate fair value, estimates of future cash flows used in that technique shall be consistent with the objective of measuring fair value. [7] Concepts Statement 7 discusses two present value techniques: a traditional approach, in which a single set of estimated cash flows and a single interest rate (a rate commensurate with the risk) are used to estimate fair value, and an expected cash flow approach, in which multiple cash flow scenarios that reflect the range of possible outcomes and a credit-adjusted risk-free rate are used to estimate fair value. Although either present value technique could theoretically be used for a fair value measurement, the expected cash flow approach will usually be the only appropriate technique for an asset retirement obligation. As discussed in paragraph 44 of Concepts Statement 7, proper application of a traditional approach entails analysis of at least two liabilities—one that exists in the marketplace and has an observable interest rate and the liability

being measured. The appropriate rate of interest for the cash flows being measured must be inferred from the observable rate of interest of some other liability, and to draw that inference the characteristics of the cash flows must be similar to those of the liability being measured. It would be rare, if ever, that there would be an observable rate of interest for a liability that has cash flows similar to an asset retirement obligation being measured. In addition, an asset retirement obligation will usually have uncertainties in both timing and amount. In that circumstance, employing a traditional present value technique, where uncertainty is incorporated into the rate, will be difficult, if not impossible.

9. The cash flows used in estimates of fair value shall incorporate assumptions that marketplace participants would use in their estimates of fair value whenever that information is available without undue cost and effort. Otherwise, an entity may use its own assumptions. [8] Those estimates shall be based on reasonable and supportable assumptions and shall consider all available evidence. The weight given to the evidence shall be commensurate with the extent to which the evidence can be verified objectively. If a range is estimated for the timing or the amount of possible cash flows, the likelihood of possible outcomes shall be considered. An entity, when using the expected cash flow technique, shall discount the estimated cash flows using a credit-adjusted risk-free rate. Thus, the effect of the entity's credit standing is reflected in the discount rate rather than in the estimated cash flows.

10. A liability for an asset retirement obligation may be incurred over more than one reporting period if the events that create the obligation occur over more than one reporting period. Any incremental liability incurred in a subsequent reporting period shall be considered to be an additional layer of the original liability. Each layer shall be initially measured at fair value. For example, the liability for decommissioning a nuclear power plant is incurred as contamination occurs. Each period, as contamination increases, a separate layer shall be measured and recognized.

Recognition and Allocation of an Asset Retirement Cost

11. Upon initial recognition of a liability for an asset retirement obligation, an entity shall capitalize an asset retirement cost by increasing the carrying amount of the related long-lived asset by the same amount as the liability. [9] An entity shall subsequently allocate that asset retirement cost to expense using a systematic and rational method over its useful life. Application of a systematic and rational allocation method does not preclude an entity from capitalizing an amount of asset retirement cost and allocating an equal amount to expense in the same accounting period. [10]

Asset Impairment

12. In applying the provisions of Statement 121, [11] the carrying amount of the asset being tested for impairment shall include amounts of capitalized asset retirement costs. Estimated

future cash flows related to the liability for an asset retirement obligation that has been recognized in the financial statements shall be excluded from (a) the undiscounted cash flows used to test the asset for recoverability and (b) the discounted cash flows used to measure the asset's fair value. If the fair value of the asset is based on a quoted market price and that price considers the costs that will be incurred in retiring that asset, the quoted market price shall be increased by the fair value of the asset retirement obligation for purposes of measuring impairment.

Subsequent Recognition and Measurement

13. In periods subsequent to initial measurement, an entity shall recognize period-to-period changes in the liability for an asset retirement obligation resulting from (a) the passage of time and (b) revisions to either the timing or the amount of the original estimate of undiscounted cash flows. An entity shall measure and incorporate changes due to the passage of time into the carrying amount of the liability before measuring changes resulting from a revision to either the timing or the amount of estimated cash flows.

14. An entity shall measure changes in the liability for an asset retirement obligation due to passage of time by applying an interest method of allocation to the amount of the liability at the beginning of the period. [12] The interest rate used to measure that change shall be the credit-adjusted risk-free rate that existed when the liability, or portion thereof, was initially measured. That amount shall be recognized as an increase in the carrying amount of the liability and as an expense classified as an operating item in the statement of income, hereinafter referred to as *accretion expense*. [13] Accretion expense shall not be considered to be interest cost for purposes of applying FASB Statement No. 34, *Capitalization of Interest Cost.*

15. Changes resulting from revisions to the timing or the amount of the original estimate of undiscounted cash flows shall be recognized as an increase or a decrease in (a) the carrying amount of the liability for an asset retirement obligation and (b) the related asset retirement cost capitalized as part of the carrying amount of the related long-lived asset. Upward revisions in the amount of undiscounted estimated cash flows shall be discounted using the current credit-adjusted risk-free rate. Downward revisions in the amount of undiscounted estimated cash flows shall be discounted using the credit-adjusted risk-free rate that existed when the original liability was recognized. If an entity cannot identify the prior period to which the downward revision relates, it may use a weighted-average credit-adjusted risk-free rate to discount the downward revision to estimated future cash flows. When asset retirement costs change as a result of a revision to estimated cash flows, an entity shall adjust the amount of asset retirement cost allocated to expense in the period of change if the change affects that period only or in the period of change and future periods if the change affects more than one period as required by APB Opinion No. 20, *Accounting Changes* (paragraph 31), for a change in estimate.

Effects of Funding and Assurance Provisions

16. Providing assurance that an entity will be able to satisfy its asset retirement obligation does not satisfy or extinguish the related liability. Methods of providing assurance include surety bonds, insurance policies, letters of credit, guarantees by other entities, and establishment of trust funds or identification of other assets dedicated to satisfy the asset retirement obligation. The existence of funding and assurance provisions may affect the determination of the credit-adjusted risk-free rate. For a previously recognized asset retirement obligation, changes in funding and assurance provisions have no effect on the initial measurement or accretion of that liability, but may affect the credit-adjusted risk-free rate used to discount upward revisions in undiscounted cash flows for that obligation. Costs associated with complying with funding or assurance provisions are accounted for separately from the asset retirement obligation.

Leasing Transactions

17. This Statement does not apply to obligations of a lessee in connection with leased property, whether imposed by a lease agreement or by a party other than the lessor, that meet the definition of either minimum lease payments or contingent rentals in paragraph 5 of FASB Statement No. 13, *Accounting for Leases*. [14] Those obligations shall be accounted for by the lessee in accordance with the requirements of Statement 13 (as amended). However, if obligations of a lessee in connection with leased property, whether imposed by a lease agreement or by a party other than the lessor, meet the provisions in paragraph 2 of this Statement but do not meet the definition of either minimum lease payments or contingent rentals in paragraph 5 of Statement 13, those obligations shall be accounted for by the lessee in accordance with the requirements of this Statement.

18. Obligations of a lessor in connection with leased property that meet the provisions in paragraph 2 of this Statement shall be accounted for by the lessor in accordance with the requirements of this Statement.

Rate-Regulated Entities

19. This Statement applies to rate-regulated entities that meet the criteria for application of FASB Statement No. 71, *Accounting for the Effects of Certain Types of Regulation,* as provided in paragraph 5 of that Statement. Paragraphs 9 and 11 of Statement 71 provide specific conditions that must be met to recognize a regulatory asset and a regulatory liability, respectively.

20. Many rate-regulated entities currently provide for the costs related to the retirement of certain long-lived assets in their financial statements and recover those amounts in rates charged to their customers. Some of those costs result from asset retirement obligations within the scope of this Statement; others result from costs that are not within the scope of this Statement. The

amounts charged to customers for the costs related to the retirement of long-lived assets may differ from the period costs recognized in accordance with this Statement and, therefore, may result in a difference in the timing of recognition of period costs for financial reporting and rate-making purposes. An additional recognition timing difference may exist when the costs related to the retirement of long-lived assets are included in amounts charged to customers but liabilities are not recognized in the financial statements. If the requirements of Statement 71 are met, a regulated entity also shall recognize a regulatory asset or liability for differences in the timing of recognition of the period costs associated with asset retirement obligations for financial reporting pursuant to this Statement and rate-making purposes.

21. The capitalized amount of an asset retirement cost shall be included in the assessment of impairment of long-lived assets of a rate-regulated entity just as that cost is included in the assessment of impairment of long-lived assets of any other entity. FASB Statement No. 90, *Regulated Enterprises—Accounting for Abandonments and Disallowances of Plant Costs,* applies to the asset retirement cost related to a long-lived asset of a rate-regulated entity that has been closed or abandoned.

Disclosures

22. An entity shall disclose the following information about its asset retirement obligations:

a. A general description of the asset retirement obligations and the associated long-lived assets
b. The fair value of assets that are legally restricted for purposes of settling asset retirement obligations
c. A reconciliation of the beginning and ending aggregate carrying amount of asset retirement obligations showing separately the changes attributable to (1) liabilities incurred in the current period, (2) liabilities settled in the current period, (3) accretion expense, and (4) revisions in estimated cash flows, whenever there is a significant change in one or more of those four components during the reporting period.

If the fair value of an asset retirement obligation cannot be reasonably estimated, that fact and the reasons therefor shall be disclosed.

Amendment to Existing Pronouncement

23. Paragraph 37 of FASB Statement No. 19, *Financial Accounting and Reporting by Oil and Gas Producing Companies,* is replaced by the following:

> Obligations for dismantlement, restoration, and abandonment costs shall be accounted for in accordance with the provisions of FASB Statement No. 143, *Accounting for Asset Retirement Obligations.* Estimated residual salvage values shall be taken into account in determining amortization and depreciation rates.

Effective Date and Transition

24. This Statement shall be effective for financial statements issued for fiscal years beginning after June 15, 2002. Earlier application is encouraged. Initial application of this Statement shall be as of the beginning of an entity's fiscal year. If this Statement is adopted prior to the effective date and during an interim period other than the first interim period of a fiscal year, all prior interim periods of that fiscal year shall be restated.

25. Upon initial application of this Statement, an entity shall recognize the following items in its statement of financial position: (a) a liability for any existing asset retirement obligations adjusted for cumulative accretion to the date of adoption of this Statement, (b) an asset retirement cost capitalized as an increase to the carrying amount of the associated long-lived asset, and (c) accumulated depreciation on that capitalized cost. Amounts resulting from initial application of this Statement shall be measured using current (that is, as of the date of adoption of this Statement) information, current assumptions, and current interest rates. The amount recognized as an asset retirement cost shall be measured as of the date the asset retirement obligation was incurred. Cumulative accretion and accumulated depreciation shall be measured for the time period from the date the liability would have been recognized had the provisions of this Statement been in effect to the date of adoption of this Statement. Appendix D provides examples that illustrate application of the transition provisions of this Statement.

26. An entity shall recognize the cumulative effect of initially applying this Statement as a change in accounting principle as described in paragraph 20 of Opinion 20. The amount to be reported as a cumulative-effect adjustment in the statement of operations is the difference between the amounts, if any, recognized in the statement of financial position prior to the application of this Statement (for example, under the provisions of Statement 19) and the net amount that is recognized in the statement of financial position pursuant to paragraph 25.

27. In addition to disclosures required by paragraphs 19(c), 19(d), and 21 of Opinion 20, [15] an entity shall compute on a pro forma basis and disclose in the footnotes to the financial statements for the beginning of the earliest year presented and at the end of all years presented the amount of the liability for asset retirement obligations as if this Statement had been applied during all periods affected. The pro forma amounts of that liability shall be measured using current (that is, as of the date of adoption of this Statement) information, current assumptions, and current interest rates.

28. Lease classification tests performed in accordance with the requirements of Statement 13 at, or subsequent to, the date of initial application of this Statement shall incorporate the requirements of this Statement to the extent applicable.[16] However, leases existing at the date of initial application of this Statement shall not be reclassified to reflect the effects of the requirements of this Statement on the lease classification tests previously performed in

accordance with the requirements of Statement 13.

The provisions of this Statement need not be applied to immaterial items.

This Statement was adopted by the unanimous vote of the six members of the Financial Accounting Standards Board.

Edmund L. Jenkins, *Chairman*
G. Michael Crooch
John M. Foster
Gaylen N. Larson
Gerhard G. Mueller
Edward W. Trott

Appendix A

IMPLEMENTATION GUIDANCE

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Appendix A: IMPLEMENTATION GUIDANCE

Introduction

A1. This appendix describes certain provisions of this Statement in more detail and explains how they apply to certain situations. Facts and circumstances need to be considered carefully in applying this Statement. This appendix is an integral part of the standards of this Statement.

Scope

Legal Obligation

A2. This Statement applies to legal obligations associated with the retirement of a tangible long-lived asset. For purposes of this Statement, a legal obligation can result from (a) a government action, such as a law, statute, or ordinance, (b) an agreement between entities, such as a written or oral contract, or (c) a promise conveyed to a third party that imposes a reasonable expectation of performance upon the promisor under the doctrine of promissory estoppel. *Black's Law Dictionary,* seventh edition, defines *promissory estoppel* as, "The principle that a promise made without consideration may nonetheless be enforced to prevent injustice if the promisor should have reasonably expected the promisee to rely on the promise and if the promisee did actually rely on the promise to his or her detriment."

A3. In most cases involving an asset retirement obligation, the determination of whether a legal obligation exists should be unambiguous. However, in situations in which no law, statute, ordinance, or contract exists but an entity makes a promise to a third party (which may include the public at large) about its intention to perform retirement activities, facts and circumstances need to be considered carefully in determining whether that promise has imposed a legal obligation upon the promisor under the doctrine of promissory estoppel. A legal obligation may exist even though no party has taken any formal action. In assessing whether a legal obligation exists, an entity is not permitted to forecast changes in the law or changes in the interpretation of existing laws and regulations. Preparers and their legal advisors are required to evaluate current circumstances to determine whether a legal obligation exists.

A4. For example, assume a company operates a manufacturing facility and has plans to retire it within five years. Members of the local press have begun to publicize the fact that when the company ceases operations at the plant, it plans to abandon the site without demolishing the building and restoring the underlying land. Due to the significant negative publicity and demands by the public that the company commit to dismantling the plant upon retirement, the company's chief executive officer holds a press conference at city hall to announce that the

company will demolish the building and restore the underlying land when the company ceases operations at the plant. Although no law, statute, ordinance, or written contract exists requiring the company to perform any demolition or restoration activities, the promise made by the company's chief executive officer may have created a legal obligation under the doctrine of promissory estoppel. In that circumstance, the company's management (and legal counsel, if necessary) would have to evaluate the particular facts and circumstances to determine whether a legal obligation exists.

A5. Contracts between entities may contain an option or a provision that requires one party to the contract to perform retirement activities when an asset is retired. The other party may decide in the future not to exercise the option or to waive the provision to perform retirement activities, or that party may have a history of waiving similar provisions in other contracts. Even if there is an expectation of a waiver or nonenforcement, the contract still imposes a legal obligation. That obligation is included in the scope of this Statement. The likelihood of a waiver or nonenforcement will affect the measurement of the liability.

Issues Associated with the Retirement of a Tangible Long-Lived Asset

A6. In this Statement, the term *retirement* is defined as the other-than-temporary removal of a long-lived asset from service. As used in this Statement, that term encompasses sale, abandonment, or disposal in some other manner. However, it does not encompass the temporary idling of a long-lived asset. After an entity retires an asset, that asset is no longer under the control of that entity, no longer in existence, or no longer capable of being used in the manner for which the asset was originally acquired, constructed, or developed. Activities necessary to prepare an asset for an alternative use are not associated with the retirement of the asset and are not within the scope of this Statement.

A7. Typically, settlement of an asset retirement obligation is not required until the associated asset is retired. However, certain circumstances may exist in which partial settlement of an asset retirement obligation is required or performed before the asset is fully retired. The fact that partial settlement of an obligation is required or performed prior to full retirement of an asset does not remove that obligation from the scope of this Statement.

A8. For example, consider an entity that owns and operates a landfill. Regulations require that that entity perform capping, closure, and post-closure activities. Capping activities involve covering the land with topsoil and planting vegetation. Closure activities include drainage, engineering, and demolition and must be performed prior to commencing the post-closure activities. Post-closure activities, the final retirement activities, include maintaining the landfill once final certification of closure has been received and monitoring the ground and surface water, gas emissions, and air quality. Closure and post-closure activities are performed after the entire landfill ceases receiving waste (that is, after the landfill is retired). However, capping activities are performed as sections of the landfill become full and are effectively retired. The fact that some of the capping activities are performed while the landfill continues to accept waste

does not remove the obligation to perform those intermediate capping activities from the scope of this Statement.

A9. Obligations associated with maintenance, rather than retirement, of a long-lived asset are excluded from the scope of this Statement. The cost of a replacement part that is a component of a long-lived asset is not within the scope of this Statement. Any legal obligations that require disposal of the replaced part are within the scope of this Statement.

Obligations Resulting from the Acquisition, Construction, or Development and (or) Normal Operation of an Asset

A10. Paragraph 2 of this Statement limits its scope to those legal obligations that result from the acquisition, construction, or development and (or) the normal operation of a long-lived asset.

A11. Whether an obligation results from the acquisition, construction, or development of a long-lived asset should, in most circumstances, be clear. For example, if an entity acquires a landfill that is already in operation, an obligation to perform capping, closure, and post-closure activities results from the acquisition and assumption of obligations related to past normal operations of the landfill. Additional obligations will be incurred as a result of future operations of the landfill.

A12. Whether an obligation results from the normal operation of a long-lived asset may require judgment. Obligations that result from the normal operation of an asset should be predictable and likely of occurring. For example, consider a company that owns and operates a nuclear power plant. That company has a legal obligation to perform decontamination activities when the plant ceases operations. Contamination, which gives rise to the obligation, is predictable and likely of occurring and is unavoidable as a result of operating the plant. Therefore, the obligation to perform decontamination activities at that plant results from the normal operation of the plant.

A13. An environmental remediation liability that results from the improper operation of a long-lived asset does not fall within the scope of this Statement. Obligations resulting from improper operations do not represent costs that are an integral part of the tangible long-lived asset and therefore should not be accounted for as part of the cost basis of the asset. For example, a certain amount of spillage may be inherent in the normal operations of a fuel storage facility, but a catastrophic accident caused by noncompliance with a company's safety procedures is not. The obligation to clean up after the catastrophic accident does not result from the normal operation of the facility and is not within the scope of this Statement. An environmental remediation liability that results from the normal operation of a long-lived asset and that is associated with the retirement of that asset shall be accounted for under the provisions of this Statement.

Asset Retirement Obligations with Indeterminate Settlement Dates

A14. An asset retirement obligation may result from the acquisition, construction, or development and (or) normal operation of a long-lived asset that has an indeterminate useful life and thereby an indeterminate settlement date for the asset retirement obligation. Uncertainty about the timing of settlement of the asset retirement obligation does not remove that obligation from the scope of this Statement but will affect the measurement of a liability for that obligation (refer to paragraph A16).

Asset Retirement Obligations Related to Component Parts of Larger Systems

A15. An asset retirement obligation may exist for component parts of a larger system. In some circumstances, the retirement of the component parts may be required before the retirement of the larger system to which the component parts belong. For example, consider an aluminum smelter that owns and operates several kilns lined with a special type of brick. The kilns have a long useful life, but the bricks wear out after approximately five years of use and are replaced on a periodic basis to maintain optimal efficiency of the kilns. Because the bricks become contaminated with hazardous chemicals while in the kiln, a state law requires that when the bricks are removed, they must be disposed of at a special hazardous waste site. The obligation to dispose of those bricks is within the scope of this Statement. The cost of the replacement bricks and their installation are not part of that obligation.

Liability Recognition—Asset Retirement Obligations with Indeterminate Settlement Dates

A16. Instances may occur in which insufficient information to estimate the fair value of an asset retirement obligation is available. For example, if an asset has an indeterminate useful life, sufficient information to estimate a range of potential settlement dates for the obligation might not be available. In such cases, the liability would be initially recognized in the period in which sufficient information exists to estimate a range of potential settlement dates that is needed to employ a present value technique to estimate fair value.

Liability Recognition—Conditional Obligations

A17. A conditional obligation to perform a retirement activity is within the scope of this Statement. For example, if a governmental unit retains the right (an option) to decide whether to require a retirement activity, there is some uncertainty about whether those retirement activities will be required or waived. Regardless of the uncertainty attributable to the option, a legal obligation to stand ready to perform retirement activities still exists, and the governmental unit might require them to be performed. Uncertainty about whether performance will be required does not defer the recognition of a retirement obligation; rather, that uncertainty is factored into the measurement of the fair value of the liability through assignment of probabilities to cash flows. Uncertainty about performance of conditional obligations shall not prevent the determination of a reasonable estimate of fair value.

A18. A past history of nonenforcement of an unambiguous obligation does not defer recognition of a liability, but its measurement is affected by the uncertainty over the requirement to perform retirement activities. Uncertainty about the requirement to perform retirement activities shall not prevent the determination of a reasonable estimate of fair value. Guidance on how to estimate a liability in the presence of uncertainty about a requirement to perform retirement activities is provided in Appendix C.

Initial Measurement of a Liability for an Asset Retirement Obligation

A19. The objective of the initial measurement of a liability for an asset retirement obligation shall be fair value. Quoted market prices are the best representation of fair value. When market prices are not available, the amount of the liability must be estimated using some other measurement technique. The use of an expected present value technique in measuring the fair value of a liability is discussed in Concepts Statement 7.

A20. In estimating the fair value of a liability for an asset retirement obligation using an expected present value technique, an entity shall begin by estimating cash flows that reflect, to the extent possible, a marketplace assessment of the cost and timing of performing the required retirement activities. The measurement objective is to determine the amount a third party [17] would demand to assume the obligation. Considerations in estimating those cash flows include developing and incorporating explicit assumptions, to the extent possible, about all of the following:

a. The costs that a third party would incur in performing the tasks necessary to retire the asset
b. Other amounts that a third party would include in determining the price of settlement, including, for example, inflation, overhead, equipment charges, profit margin, and advances in technology
c. The extent to which the amount of a third party's costs or the timing of its costs would vary under different future scenarios and the relative probabilities of those scenarios
d. The price that a third party would demand and could expect to receive for bearing the uncertainties and unforeseeable circumstances inherent in the obligation, sometimes referred to as a market-risk premium.

It is expected that uncertainties about the amount and timing of future cash flows can be accommodated by using the expected cash flow technique and therefore will not prevent the determination of a reasonable estimate of fair value.

A21. An entity shall discount estimates of future cash flows using an interest rate that equates to a risk-free interest rate adjusted for the effect of its credit standing (a credit-adjusted risk-free rate). [18] The risk-free interest rate is the interest rate on monetary assets that are essentially risk free and that have maturity dates that coincide with the expected timing of the estimated cash flows required to satisfy the asset retirement obligation. [19] Concepts Statement 7 illustrates an adjustment to the risk-free interest rate to reflect the credit standing of the entity, but

acknowledges that adjustments for default risk can be reflected in either the discount rate or the estimated cash flows. The Board believes that in most situations, an entity will know the adjustment required to the risk-free interest rate to reflect its credit standing. Consequently, it would be easier and less complex to reflect that adjustment in the discount rate. In addition, because of the requirements in paragraph 15 relating to upward and downward adjustments in cash flow estimates, it is essential to the operationality of this Statement that the credit standing of the entity be reflected in the interest rate. For those reasons, the Board chose to require that the risk-free rate be adjusted for the credit standing of the entity to determine the discount rate.

A22. Where assets with asset retirement obligations are components of a larger group of assets (for example, a number of oil wells that make up an entire oil field operation), aggregation techniques may be necessary to derive a collective asset retirement obligation. This Statement does not preclude the use of estimates and computational shortcuts that are consistent with the fair value measurement objective when computing an aggregate asset retirement obligation for assets that are components of a larger group of assets.

A23. This Statement requires recognition of the fair value of a conditional asset retirement obligation before the event that either requires or waives performance occurs. Uncertainty surrounding conditional performance of the retirement obligation is factored into its measurement by assessing the likelihood that performance will be required. In situations in which the conditional aspect has only 2 outcomes and there is no information about which outcome is more probable, a 50 percent likelihood for each outcome shall be used until additional information is available. As the time for notification approaches, more information and a better perspective about the ultimate outcome will likely be obtained. Consequently, reassessment of the timing, amount, and probabilities associated with the expected cash flows may change the amount of the liability recognized. If, as time progresses, it becomes apparent that retirement activities will not be required, the liability and the remaining unamortized asset retirement cost are reduced to zero.

A24. In summary, an unambiguous requirement that gives rise to an asset retirement obligation coupled with a low likelihood of required performance still requires recognition of a liability. Uncertainty about the conditional outcome of the obligation is incorporated into the measurement of the fair value of that liability, not the recognition decision.

Subsequent Recognition and Measurement

A25. In periods subsequent to initial measurement, an entity recognizes the effect of the passage of time on the amount of a liability for an asset retirement obligation. A period-to-period increase in the carrying amount of the liability shall be recognized as an operating item (accretion expense) in the statement of income. An equivalent amount is added to the carrying amount of the liability. To calculate accretion expense, an entity shall multiply the beginning of the period liability balance by the credit-adjusted risk-free rate that existed when the liability was initially measured. The liability shall be adjusted for accretion prior to adjusting for revisions in

estimated cash flows.

A26. Revisions to a previously recorded asset retirement obligation will result from changes in the assumptions used to estimate the cash flows required to settle the asset retirement obligation, including changes in estimated probabilities, amounts, and timing of the settlement of the asset retirement obligation, as well as changes in the legal requirements of an obligation. Any changes that result in upward revisions to the undiscounted estimated cash flows shall be treated as a new liability and discounted at the current rate. Any downward revisions to the undiscounted estimated cash flows will result in a reduction of the asset retirement obligation. For downward revisions, the amount of the liability to be removed from the existing accrual shall be discounted at the rate that was used at the time the obligation to which the downward revision relates was originally recorded (or the historical weighted-average rate if the year(s) to which the downward revision applies cannot be determined).

A27. Revisions to the asset retirement obligation result in adjustments of capitalized asset retirement costs and will affect subsequent depreciation of the related asset. Such adjustments are depreciated on a prospective basis.

Appendix B

BACKGROUND INFORMATION AND BASIS FOR CONCLUSIONS

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Appendix B: BACKGROUND INFORMATION AND BASIS FOR CONCLUSIONS

Introduction

B1. This appendix summarizes considerations that Board members deemed significant in reaching the conclusions in this Statement. It includes reasons for accepting certain approaches and rejecting others. Individual Board members gave greater weight to some factors than to others.

Background Information

B2. In February 1994, the Edison Electric Institute (EEI) requested that the Board add a project to its agenda to address accounting for removal costs, including the costs of nuclear decommissioning as well as similar costs incurred in other industries. At its April 1994 meeting, the Financial Accounting Standards Advisory Council (FASAC) discussed the advisability of the Board's adding to its agenda a project limited to accounting for the costs of nuclear decommissioning, a broader project on accounting for removal costs including nuclear decommissioning, or an even broader project on environmental costs. At that time, most FASAC members suggested that the Board undertake either a project on accounting for removal costs or a broader project on environmental costs. In June 1994, the Board also met with representatives from the EEI, the oil and gas industry, the mining industry, and the AICPA Environmental Task Force to discuss the EEI's request.

B3. In June 1994, the Board added a project to its agenda on accounting for the costs of nuclear decommissioning. Shortly thereafter, the Board expanded the scope of the project to include similar closure or removal-type costs in other industries. An FASB Exposure Draft, *Accounting for Certain Liabilities Related to Closure or Removal of Long-Lived Assets* (initial Exposure Draft), was issued on February 7, 1996. The Board received 123 letters of comment.

B4. In October 1997, the Board decided to continue with the closure or removal project by proceeding toward a revised Exposure Draft. The Board decided to change the title of the project to accounting for obligations associated with the retirement of long-lived assets and the project became subsequently known as the asset retirement obligations project. The Board issued a revised Exposure Draft, *Accounting for Obligations Associated with the Retirement of Long-Lived Assets,* in February 2000 and received 50 letters of comment. The Board concluded that it could reach an informed decision on the basis of existing information without a public hearing.

B5. The major objective of the asset retirement obligations project was to provide accounting requirements for the recognition and measurement of liabilities for obligations associated with the retirement of long-lived assets. Another objective was to provide accounting requirements with respect to the recognition of asset retirement costs as well as guidance for the periodic allocation of those costs to results of operations. The key differences between the initial Exposure Draft and the revised Exposure Draft were in the scope and the requirements for initial measurement of a liability for an asset retirement obligation. Specifically, the revised Exposure Draft (a) broadened the scope of the initial Exposure Draft beyond obligations incurred in the acquisition, construction, development, or early operation of a long-lived asset to asset retirement obligations incurred any time during the life of an asset and (b) proposed that an asset retirement obligation be initially measured at fair value. The initial Exposure Draft would have required an initial measurement that reflected the present value of the estimated future cash flows required to satisfy the closure or removal obligation. One key difference between this Statement and the revised Exposure Draft is in the Statement's scope. This Statement applies only to existing legal obligations, including those for which no formal legal action has been taken but that would be considered legal obligations under the doctrine of promissory estoppel.

Benefits and Costs

B6. The mission of the Board is to establish and improve standards of financial accounting and reporting for the guidance and education of the public, including issuers, auditors, and users of financial information. In fulfilling that mission, the Board must determine that a proposed standard will fill a significant need and that the costs it imposes, compared with possible alternatives, will be justified in relation to the overall benefits of the resulting information. The Board's assessment of the costs and benefits of issuing an accounting standard is unavoidably subjective because there is no method to measure objectively the costs to implement an accounting standard or to quantify the value of improved information in financial statements.

B7. Existing accounting practices for asset retirement obligations were inconsistent in the criteria used for recognition, the measurement objective, and the presentation of those obligations in the financial statements. Some entities did not recognize any asset retirement obligations. Some entities that recognized asset retirement obligations displayed them as a contra-asset. As a result, information that was conveyed in the financial statements about those obligations was inconsistent. This Statement eliminates those inconsistencies and requires disclosure of additional relevant information about those obligations in financial statements.

B8. One of the principal costs of applying this Statement is the cost of implementing the requirement to initially measure the liability for an asset retirement obligation using a fair value measurement objective. Most entities will meet that requirement by using an expected present value technique that incorporates various estimates of expected cash flows. The basis for and procedures necessary to perform that type of calculation can be found in FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements.*

Although many entities have developed information to estimate amounts for asset retirement obligations based on some notion of "cost accumulation," that information probably is not consistent with the requirements of this Statement. Some entities may not have developed any information about asset retirement obligations because, prior to this Statement, they were not required to account for that type of obligation in their financial statements. The Board believes that the benefits resulting from the improvements in financial reporting that result from the application of the requirements of this Statement outweigh the costs of implementing it.

Basis for Conclusions

Scope

B9. The scope of the initial Exposure Draft applied to all entities and to obligations for the closure or removal of long-lived assets that possessed all of the following characteristics:

a. The obligation is incurred in the acquisition, construction, development, or early operation of a long-lived asset.
b. The obligation is related to the closure or removal of a long-lived asset and cannot be satisfied until the current operation or use of the asset ceases.
c. The obligation cannot be realistically avoided if the asset is operated for its intended use.

B10. The objective of those characteristics was to limit the obligations included in the scope to those that were similar in nature to nuclear decommissioning costs and that could, therefore, be recognized and measured according to the accounting model that was proposed for decommissioning obligations. [20] Through educational sessions and the comment letters, the Board learned that, in some industries, closure or removal obligations [21] are not incurred in the same pattern as those for decommissioning. Respondents expressed concern that those characteristics could be interpreted to allow many types of closure or removal obligations to fall outside the scope of the initial Exposure Draft.

B11. Many comments related to the intended meaning of *early operation* as used in the first characteristic in paragraph B9. Many respondents indicated that it was unclear whether that phrase could be interpreted to mean that obligations incurred ratably over the operating life of a long-lived asset were not within the scope of the initial Exposure Draft. Others said that that phrase was ambiguous and, therefore, could result in entities within the same industry accounting for the same type of obligation differently depending on how they interpreted the phrase for their particular situation. Some respondents indicated that the Board should define *early operation* by using bright-line conditions or describe that phrase by using specific examples from various industries.

B12. In deliberations leading to the revised Exposure Draft, the Board decided to eliminate the first characteristic, thereby broadening the scope of the project to asset retirement obligations incurred any time during the life of an asset. In making that decision, the Board emphasized that

the determination of whether to recognize a liability should be based on the characteristics of the obligation instead of when that obligation arose. Therefore, the Board agreed that it was unnecessary to limit the scope to obligations that were similar in nature to decommissioning obligations. It also decided that the scope should be equally applicable to asset retirement obligations incurred during the operating life of a long-lived asset. In addition, the Board decided that the requirements for (a) a discounted liability measurement and (b) the capitalization of asset retirement costs were applicable regardless of when in the life of an asset a liability is incurred.

B13. Respondents to the initial Exposure Draft indicated that the second characteristic in paragraph B9 was subject to ambiguous interpretation, especially for an obligation that could be partially satisfied over the useful life of a long-lived asset even though it would not be completely satisfied until operation of that asset ceased. Specifically, in that case, one interpretation of the second characteristic is that the portion of the obligation that could be satisfied before the current operation or use of the asset ceases would not fall within the scope of this Statement, while the remaining portion of the obligation would be considered within the scope. An alternative interpretation is that the entire obligation would be considered to be outside the scope of this Statement.

B14. In deliberations leading to the revised Exposure Draft, the Board decided to eliminate the second characteristic. It observed that the nature of asset retirement obligations in various industries is such that the obligations are not necessarily satisfied when the current operation or use of the asset ceases and, in fact, can be settled during operation of the asset or after the operations cease. The Board agreed that the timing of the ultimate settlement of a liability was unrelated to and should not affect its initial recognition in the financial statements provided the obligation is associated with the retirement of a tangible long-lived asset.

B15. The Board retained the essence of the third characteristic in paragraph B9 that limited the obligations included within the scope to those that cannot be realistically avoided if the asset is operated for its intended use. Specifically, paragraph 2 of this Statement limits the obligations included within the scope to those that are unavoidable by an entity as a result of the acquisition, construction, or development and (or) the normal operation of a long-lived asset, except for certain obligations of lessees.

B16. The initial and revised Exposure Drafts included in their scope both legal and constructive obligations. In the basis for conclusions of the initial Exposure Draft, the Board stressed that the identification of constructive obligations will be more difficult than the identification of legal obligations. It noted that judgment would be required to determine if constructive obligations exist. Many respondents to the initial Exposure Draft indicated that more guidance was needed with respect to the identification of constructive obligations. Therefore, in the revised Exposure Draft, the Board focused on the three characteristics of a liability in paragraph 36 of FASB Concepts Statement No. 6, *Elements of Financial Statements,* rather than on the distinction between a legal obligation and a constructive obligation. Nevertheless, many respondents to the

revised Exposure Draft addressed the notion of constructive obligations. Many of those respondents stated that without improved guidance for determining whether a constructive obligation exists, inconsistent application of this Statement would likely result. In deliberations of the revised Exposure Draft, the Board conceded that determining when a constructive obligation exists is very subjective. To achieve more consistent application of this Statement, the Board decided that only existing legal obligations, including legal obligations under the doctrine of promissory estoppel, should be included in the scope. Legal obligations, as used in this Statement, encompass both legally enforceable obligations and constructive obligations, as those terms are used in Concepts Statement 6.

B17. In addition to comments about scope-limiting characteristics, respondents expressed uncertainty about whether the scope of the initial Exposure Draft applied to closure and removal obligations for interim property retirements and replacements for component parts of larger systems. [22] The Board believes that there is no conceptual difference between interim property retirements and replacements and those retirements that occur in circumstances in which the retired asset is not replaced. Therefore, any asset retirement obligation associated with the retirement of or the retirement and replacement of a component part of a larger system qualifies for recognition provided that the obligation meets the definition of a liability. The cost of replacement components is excluded.

B18. Some respondents questioned whether asset retirement obligations with indeterminate settlement dates, such as for an oil refinery, were within the scope of the initial Exposure Draft. They suggested that it would be difficult to estimate a retirement obligation because of uncertainty about the timing of retirement.

B19. The Board decided that asset retirement obligations with indeterminate settlement dates should be included within the scope of this Statement. Uncertainty about the timing of the settlement date does not change the fact that an entity has a legal obligation. The Board acknowledged that although there is an obligation, measurement of that obligation might not be possible if literally no information exists about the timing of settlement. However, some information about the timing of the settlement of a retirement obligation will become available as time goes by. The Board decided that an entity should measure and recognize the fair value of an obligation at the point in time when some information is available to develop various assumptions about the potential timing of cash flows.

B20. The Board also clarified the scope of this Statement relative to the scope of AICPA Statement of Position 96-1, *Environmental Remediation Liabilities.* This Statement applies to legal obligations associated with asset retirements. Legal obligations exist as a result of existing or enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel. SOP 96-1 applies to environmental remediation liabilities that relate to pollution arising from some past act, generally as a result of the provisions of Superfund, the corrective-action provisions of the Resource Conservation and Recovery Act of 1976, or analogous state and non-U.S. laws and regulations. An environmental

remediation liability that results from the normal operation of a long-lived asset and that is associated with the retirement of that asset shall be accounted for under the provisions of this Statement. An environmental remediation liability that results from other than the normal operation of a long-lived asset probably falls within the scope of SOP 96-1.

Recognition of a Liability for an Asset Retirement Obligation

B21. Prior to this Statement, the objective of many accounting practices was not to recognize and measure obligations associated with the retirement of long-lived assets. Rather, the objective was to achieve a particular expense recognition pattern for those obligations over the operating life of the associated long-lived asset. Using that objective, some entities followed an approach whereby they estimated an amount that would satisfy the costs of retiring the asset and accrued a portion of that amount each period as an expense and as a liability. Other entities used that objective and the provision in paragraph 37 of FASB Statement No. 19, *Financial Accounting and Reporting by Oil and Gas Producing Companies,* that allows them to increase periodic depreciation expense by increasing the depreciable base of a long-lived asset for an amount representing estimated asset retirement costs. Under either of those approaches, the amount of liability or accumulated depreciation recognized in a statement of financial position usually differs from the amount of obligation that an entity actually has incurred. In effect, by focusing on an objective of achieving a particular expense recognition pattern, accounting practices developed that disregarded or circumvented the recognition and measurement requirements of FASB Concepts Statements.

B22. Paragraph 37 of Statement 19 states that "estimated dismantlement, restoration, and abandonment costs . . . shall be taken into account in determining amortization and depreciation rates." Application of that paragraph has the effect of accruing an expense irrespective of the requirements for liability recognition in the FASB Concepts Statements. In doing so, it results in recognition of accumulated depreciation that can exceed the historical cost of a long-lived asset. The Board concluded that an entity should be precluded from including an amount for an asset retirement obligation in the depreciable base of a long-lived asset unless that amount also meets the recognition criteria in this Statement. When an entity recognizes a liability for an asset retirement obligation, it also will recognize an increase in the carrying amount of the related long-lived asset. Consequently, depreciation of that asset will not result in the recognition of accumulated depreciation in excess of the historical cost of a long-lived asset.

B23. This Statement applies to legal obligations associated with the retirement of a tangible long-lived asset that result from the acquisition, construction, or development and (or) the normal operation of a long-lived asset, except for certain obligations of lessees. As used in this Statement, a legal obligation is an obligation that a party is required to settle as a result of existing or enacted law, statute, ordinance, written or oral contract or by legal construction under the doctrine of promissory estoppel. The Board believes that using legal obligations as a scope characteristic includes appropriate constructive obligations. An asset retirement obligation encompasses the three characteristics of a liability set forth in paragraphs 36–40 of Concepts

Statement 6 as discussed below. Those characteristics are interrelated; however, each characteristic must be present to meet the definition of a liability.

Duty or Responsibility

B24. The first characteristic of a liability is that an entity has "a present duty or responsibility to one or more other entities that entails settlement by probable future transfer or use of assets at a specified or determinable date, on occurrence of a specified event, or on demand." A duty or responsibility becomes a *present* duty or responsibility when an obligating event occurs that leaves the entity little or no discretion to avoid a future transfer or use of assets. A present duty or responsibility does not mean that the obligation must be satisfied immediately. Rather, if events or circumstances have occurred that, as discussed below, give an entity little or no discretion to avoid a future transfer or use of assets, that entity has a present duty or responsibility. If an entity is required by current laws, regulations, or contracts to settle an asset retirement obligation upon retirement of the asset, that requirement is a present duty.

B25. In general, a duty or responsibility is created by an entity's promise, on which others are justified in relying, to take a particular course of action (to perform). That performance will entail the future transfer or use of assets. An entity's promise may be:

a. Unconditional or conditional on the occurrence of a specified future event that is or is not within the entity's control
b. Stated in words, either oral or written, or inferred from the entity's past practice, which, absent evidence to the contrary, others can presume that the entity will continue.

B26. Others are justified in relying on an entity to perform as promised if:

a. They or their representatives are the recipient of the entity's promise.
b. They can reasonably expect the entity to perform (that is, the entity's promise is credible).
c. They either will benefit from the entity's performance or will suffer loss or harm from the entity's nonperformance.

B27. In other situations, a duty or responsibility is created by circumstances in which, absent a promise, an entity finds itself bound to perform, and others are justified in relying on the entity to perform. [23] In those circumstances, others are justified in relying on an entity to perform if:

a. They can reasonably expect the entity to perform.
b. They either will benefit from the entity's performance or will suffer loss or harm from the entity's nonperformance.

B28. The reasonable expectation that the entity will perform is inferred from the particular circumstances, and those circumstances bind the entity to the same degree that it would have been bound had it made a promise.

B29. The assessment of whether there is a legal duty or responsibility for an asset retirement

obligation is usually quite clear. However, the assessment of whether there is a duty or responsibility resulting, for example, from a past practice or a representation made to another entity, including the public at large, will require judgment, especially with respect to whether others are justified in relying on the entity to perform as promised. Those judgments should be made within the framework of the doctrine of promissory estoppel (refer to paragraph A3). Once an entity determines that a duty or responsibility exists, it will then need to assess whether an obligating event has occurred that leaves it little or no discretion to avoid the future transfer or use of assets. If such an obligating event has occurred, an asset retirement obligation meets the definition of a liability and qualifies for recognition in the financial statements. However, if an obligating event that leaves an entity little or no discretion to avoid the future transfer or use of assets has not occurred, an asset retirement obligation does not meet the definition of a liability and, therefore, should not be recognized in the financial statements.

Little or No Discretion to Avoid a Future Transfer or Use of Assets

B30. The second characteristic of a liability is that ". . . the duty or responsibility obligates a particular entity, leaving it little or no discretion to avoid the future sacrifice." Paragraph 203 of Concepts Statement 6 elaborates on that characteristic by indicating that an entity is not obligated to transfer or use assets in the future if it can avoid that transfer or use of assets at its discretion without significant penalty.

Obligating Event

B31. The third characteristic of a liability is that ". . . the transaction or other event obligating the entity has already happened." The definition of a liability distinguishes between present obligations and future obligations of an entity. Only present obligations are liabilities under the definition, and they are liabilities of a particular entity as a result of the occurrence of transactions or other events or circumstances affecting the entity. Identifying the obligating event is often difficult, especially in situations that involve the occurrence of a series of transactions or other events or circumstances affecting the entity. For example, in the case of an asset retirement obligation, a law or an entity's promise may create a duty or responsibility, but that law or promise in and of itself may not be the obligating event that results in an entity's having little or no discretion to avoid a future transfer or use of assets. An entity must look to the nature of the duty or responsibility to assess whether the obligating event has occurred. For example, in the case of a nuclear power facility, an entity assumes responsibility for decontamination of that facility upon receipt of the license to operate it. However, no obligation to decontaminate exists until the facility is operated and contamination occurs. Therefore, the contamination, not the receipt of the license, constitutes the obligating event.

Initial Recognition and Measurement of a Liability

B32. The initial Exposure Draft would have required that a liability for an asset retirement obligation be initially measured at an amount that reflected the present value of the estimated future cash flows required to satisfy the closure or removal obligation. Subsequent to the issuance of the initial Exposure Draft, the Board issued Concepts Statement 7. In that Concepts

Statement, the Board concluded that "the only objective of present value, when used in accounting measurements at initial recognition and fresh-start measurements, is to estimate fair value" (paragraph 25). Consequently, in its deliberations leading to the revised Exposure Draft, the Board concluded that the objective for the initial measurement of a liability for an asset retirement obligation is fair value, which is the amount that an entity would be required to pay in an active market to settle the asset retirement obligation in a current transaction in circumstances other than a forced settlement. In that context, fair value represents the amount that a willing third party of comparable credit standing would demand and could expect to receive to assume all of the duties, uncertainties, and risks inherent in the entity's obligation.

B33. The revised Exposure Draft proposed that an entity should recognize a liability for an asset retirement obligation in the period in which all of the following criteria are met:

a. The obligation meets the definition of a liability in paragraph 35 of Concepts Statement 6.
b. A future transfer of assets associated with the obligation is probable.
c. The amount of the liability can be reasonably estimated.

B34. The definition of a liability in Concepts Statement 6 uses the term *probable* in a different sense than it is used in FASB Statement No. 5, *Accounting for Contingencies*. As used in Statement 5, probable requires a high degree of expectation. The term probable in the definition of a liability is intended to acknowledge that business and other economic activities occur in an environment characterized by uncertainty in which few outcomes are certain.

B35. Statement 5 and Concepts Statement 7 deal with uncertainty in different ways. Statement 5 deals with uncertainty about whether a loss has been incurred by setting forth criteria to determine when to *recognize* a loss contingency. Concepts Statement 7, on the other hand, addresses measurement of liabilities and provides a *measurement* technique to deal with uncertainty about the amount and timing of the future cash flows necessary to settle the liability. Because of the Board's decision to incorporate probability into the measurement of an asset retirement obligation, the guidance in Statement 5 and FASB Interpretation No. 14, *Reasonable Estimation of the Amount of a Loss,* is not applicable.

B36. The objective of recognizing the fair value of an asset retirement obligation will result in recognition of some asset retirement obligations for which the likelihood of future settlement, although more than zero, is less than probable from a Statement 5 perspective. [24] A third party would charge a price to assume an uncertain liability even though the likelihood of a future sacrifice is less than probable. Similarly, when the likelihood of a future sacrifice is probable, the price a third party would charge to assume an obligation incorporates expectations about some future events that are less than probable. Thus, this Statement does not retain the criterion (paragraph B33(b)) that a future transfer of assets associated with the obligation is probable for recognition purposes. This Statement does retain the conditions concerning the existence of a liability (paragraph B33(a)) and the ability to make a reasonable estimate of the amount (paragraph B33(c)).

B37. The Board considered two alternatives to fair value for initial measurement of the liability associated with an asset retirement obligation. One alternative was an entity-specific measurement that would attempt to value the liability in the context of a particular entity. An entity-specific measurement is different from a fair value measurement because it substitutes the entity's assumptions for those that marketplace participants make. Therefore, the assumptions used in an entity-specific measurement of a liability would reflect the entity's expected settlement of the liability and the role of the entity's proprietary skills in that settlement.

B38. Another alternative was a cost-accumulation measurement that would attempt to capture the costs (for example, incremental costs) that an entity anticipates it will incur in settling the liability over its expected term. A cost-accumulation measurement is different from an entity-specific measurement because it excludes assumptions related to a risk premium and may exclude overhead and other internal costs. It is different from a fair value measurement because it excludes those assumptions as well as any additional assumptions market participants would make about estimated cash flows, such as a market-based profit margin.

B39. Most respondents to the revised Exposure Draft disagreed with the Board's decision to require that a liability for an asset retirement obligation be initially measured at fair value. In general, those respondents stated that in most cases an entity settles an asset retirement obligation with internal resources rather than by contracting with a third party and, therefore, a fair value measurement objective would not provide a reasonable estimate of the costs that an entity expects to incur to settle an asset retirement obligation. Additionally, those respondents stated that a fair value measurement objective would overstate an entity's assets and liabilities and result in a gain being reported upon the settlement of the obligation. For those reasons, most of those respondents stated that the Board should adopt a cost-accumulation approach.

B40. The Board considered a cost-accumulation approach [25] in its deliberations of Concepts Statement 7. However, the Board observed there were several problems with that approach.

- Cost-accumulation measurements are accounting conventions, not attempts to replicate market transactions. Consequently, it may be difficult to discern the objective of the measurement. For example, is the "cost" based on direct, incremental expenditures or is it a "full-cost" computation that includes an allocation of overhead and fixed costs? Which costs are included in the overhead pool? Lacking a clear measurement objective, any cost accumulation method would inevitably have to be based on rules that are essentially arbitrary.
- Cost-accumulation measurements are inherently intent-driven and thus lack comparability. One entity might expect to settle all of its asset retirement obligations using internal resources. Another might expect to use internal and outsourced resources. Still another might expect to outsource the settlement of all its obligations. All three could describe the resulting measurement as "cost accumulation," but the results would hardly be comparable—each entity would have a different measurement objective for the same

liability.

- Cost-accumulation measurements present a "value" on the balance sheet that an entity would not accept in an exchange transaction. A third party would not willingly assume an asset retirement obligation at a price equal to the cost-accumulation measure. That party would include a margin for the risk involved and a profit margin for performing the service.

Of overriding importance, Board members were concerned that identical liabilities (assuming equivalent credit standing) would be measured at different amounts by different entities. The Board believes that the *value* of a liability is the same regardless of how an entity intends to settle the liability (unless the entities have different credit standing) and that the relative efficiency of an entity in settling a liability using internal resources (that is, the entity's profit margin) should be reflected over the course of its settlement and not before.

B41. If an entity elects to settle an asset retirement obligation using its internal resources, the total cash outflows—no more, no less—required to settle the obligation will, at some time, be included in operating results. The *timing* of when those cash outflows are recognized will affect the profitability of different periods, but when all of the costs of settling the liability have been incurred, the cumulative profitability from that transaction over all periods will be determined only by the total of those cash outflows. The real issue is which period or periods should reflect the efficiencies of incurring lower costs than the costs that would be required by the market to settle the liability. The Board believes it is those periods in which the activities necessary to settle the liability are incurred. If the measurement of the liability does not include the full amount of the costs required by the market to settle it, including a normal profit margin, the "profits" will be recognized prematurely.

Recognition and Allocation of Asset Retirement Costs

B42. This Statement requires that upon initial recognition of a liability, an entity capitalizes an asset retirement cost by increasing the carrying amount of the related long-lived asset. The Board believes that asset retirement costs are integral to or are a prerequisite for operating the long-lived asset and noted that current accounting practice includes in the historical-cost basis of an asset all costs that are necessary to prepare the asset for its intended use. Capitalized asset retirement costs are not a separate asset because there is no specific and separate future economic benefit that results from those costs. In other words, the future economic benefit of those costs lies in the productive asset that is used in the entity's operations.

B43. The Board considered whether asset retirement costs should be recognized as a separately identifiable intangible asset. The Board acknowledges that in certain situations an intangible asset, such as the right to operate a long-lived asset, may be acquired when obligations for asset retirement costs are incurred. However, the intangible asset is not separable from the long-lived asset, and similar intangible assets, such as building and zoning permits, are generally included in the historical cost of the long-lived asset that is acquired or constructed. Furthermore, the acquisition of an intangible asset in exchange for the agreement to incur asset retirement costs does not occur in all situations.

B44. A majority of respondents to the revised Exposure Draft agreed with the requirement to recognize an amount as an increase in the carrying amount of an asset upon initial recognition of a liability for an asset retirement obligation. However, some respondents indicated that the capitalized amount should be separately classified as an intangible asset because, for example, property taxes might increase if it was classified as a plant cost. For the reasons discussed in paragraph B43, the Board decided that such a concern did not warrant special consideration for classification of an asset retirement cost as an intangible asset.

B45. Because the scope of this Statement includes some obligations incurred more or less ratably over the entire life of a long-lived asset, the Board considered whether asset retirement costs associated with those types of obligations should be recognized as an expense of the period rather than capitalized.

B46. The Board could not develop any rationale for distinguishing between which asset retirement costs should be capitalized and which should be recognized as an expense of the period. The Board concluded that whether a cost is incurred upon acquisition or incurred ratably over the life of an asset does not change its underlying nature and its association with the asset. Therefore, the Board decided that an entity should capitalize all asset retirement costs by increasing the carrying amount of the related long-lived asset. The Board decided to couple that provision with a requirement that an entity allocate that cost to expense using a systematic and rational method over periods in which the related asset is expected to provide benefits. Application of a systematic and rational method does not preclude an entity from using an allocation method that would have the effect of capitalizing an amount of cost and allocating an equal amount to expense in the same accounting period. The Board concluded that a requirement for capitalization of an asset retirement cost along with a requirement for the systematic and rational allocation of it to expense achieves the objectives of (a) obtaining a measure of cost that more closely reflects the entity's total investment in the asset and (b) permitting the allocation of that cost, or portions thereof, to expense in the periods in which the related asset is expected to provide benefits.

B47. The Board noted that if the asset for which there is an associated asset retirement obligation were to be sold, the price a buyer would consent to pay for that asset would reflect an estimate of the fair value of the asset retirement obligation. Because that asset retirement obligation meets the definition of a liability, however, the Board believes that reporting it as a liability with a corresponding increase in the carrying amount of the asset for the asset retirement costs, which has the same net effect as incorporating the fair value of the costs to settle the liability in the valuation of the asset, is more representationally faithful and in concert with Concepts Statement 6.

Subsequent Measurement

B48. The Board considered whether to require a *fresh-start approach* or an *interest method of allocation* for subsequent measurement of the liability for an asset retirement obligation. Using

a fresh-start approach, the liability would be remeasured at fair value each period, and all changes in that fair value, including those associated with changes in interest rates, would be recognized in the financial statements. Using an interest method of allocation, the liability would not be remeasured at fair value each period. Instead, an accounting convention would be employed to measure period-to-period changes in the liability resulting from the passage of time and revisions to cash flow estimates. Those changes would then be incorporated into a remeasurement of the liability. That convention would not include changes in interest rates in that remeasurement.

B49. The major advantage of a fresh-start approach over an interest method of allocation is that the fresh-start approach results in the liability being carried in the financial statements at fair value at each reporting period. To preserve the advantages of a fair value measurement objective, the Board concluded in Concepts Statement 7 that fair value should be the objective of fresh-start measurements. The major disadvantage of a fair value objective is that it results in a more volatile expense recognition pattern than an interest method of allocation primarily due to the recognition of changes in fair value resulting from period-to-period changes in interest rates. For entities that incur a liability ratably over the life of an asset, a fresh-start approach may be less burdensome to apply than an interest method of allocation because total expected cash flows are all discounted at a current interest rate. While a fresh-start approach and an interest method of allocation both require revised estimates of expected cash flows each period, under a fresh-start approach the estimated cash flows would all be discounted at the current rate. Alternatively, an interest method of allocation requires maintenance of detailed records of expected cash flows because each layer of the liability is discounted by employing a predetermined interest amortization scheme.

B50. In May 1999, some Board members and staff met with industry representatives to discuss the advantages and disadvantages of a fresh-start approach versus an interest method of allocation for subsequent measurement of a liability for an asset retirement obligation. The industry representatives were asked to prepare examples that were used as a basis for providing input to the Board about the accounting results obtained under the two approaches and the complexity or simplicity of one approach compared with the other.

B51. The industry representatives agreed that the major advantages of a fresh-start approach are that it (a) results in the liability for an asset retirement obligation being carried in the financial statements at fair value and (b) is somewhat less burdensome to apply than an interest method of allocation. However, they emphasized that those advantages do not outweigh the overwhelming disadvantage resulting from the volatile expense recognition pattern created by the requirement under the fresh-start approach to recognize period-to-period changes in interest rates through accretion expense. In fact, they stressed that a fresh-start approach could create negative expense recognition in periods of increasing interest rates and that the effects of significant changes in interest rates during a period could, in certain circumstances, result in gains or losses attributable to the change in the measurement of the asset retirement obligation that would overwhelm income from continuing operations.

B52. The Board agreed that, conceptually, a fresh-start approach is preferable to an interest method of allocation for subsequent measurement of a liability for an asset retirement obligation. However, it acknowledged the perceived disadvantage of the volatile expense recognition pattern resulting from the use of the fresh-start approach. The Board decided that it could justify a departure from the conclusions in Concepts Statement 7, in this instance, because of the volatility a fair value measurement would entail and because the capitalized amount of the associated asset retirement cost would not be measured at fair value in subsequent periods. Until fair value is required for subsequent measurement of more (or all) liabilities, the Board decided that it may be premature to require that type of measurement in this Statement. For those reasons, the Board decided to require an interest method of allocation for subsequent measurement of a liability for an asset retirement obligation.

B53. Subsequent measurement using an interest method of allocation requires that an entity identify undiscounted estimated cash flows associated with the initial fair value measurement of the liability. Therefore, an entity that obtains the initial fair value of a liability for an asset retirement obligation from, for example, a market price, must nonetheless determine the undiscounted cash flows and estimated timing of those cash flows that are embodied in that fair value amount in order to apply the subsequent measurement requirements of this Statement. Appendix E of this Statement includes an example that illustrates a procedure to impute undiscounted cash flows from market prices.

Measurement of Changes Resulting from Revisions to Cash Flow Estimates

B54. The Board considered situations that might give rise to a change in cash flow estimates. Some situations might occur when a new law is enacted that gives rise to previously unrecognized asset retirement obligations. Another situation might be a *change* in a law that changes the expected cash outflows required to settle an asset retirement obligation. Still other situations might arise as a result of changes in technology or inflation assumptions. The Board considered the appropriate discount rate to apply in each of those circumstances. One possible answer would be to apply the current discount rate to a new obligation and use historical discount rates when there is a modification to the previous cash flow estimates. In the course of its discussion, however, the Board realized that it might be difficult to distinguish the changes in cash flows that arise from a new liability from those attributable to a modification to an estimate for an existing liability. For practical reasons, the Board decided that upward revisions in the undiscounted cash flows related to an asset retirement obligation should be discounted at the current credit-adjusted risk-free rate and that downward revisions in the undiscounted cash flows should be discounted using historical discount rates. If an entity cannot identify the period in which the original cash flows were estimated, it may use a weighted-average credit-adjusted risk-free rate to measure a change in the liability resulting from a downward revision to estimated cash flows.

B55. The Board concluded that revisions in estimates of cash flows are refinements of the

amount of the asset retirement obligation, and as such are also refinements of the estimated asset retirement costs that result in adjustments to the carrying amounts of the related asset. Therefore, the Board noted that it was not necessary to distinguish revisions in cash flow estimates that arise from changes in assumptions from those revisions that arise from a new liability—both adjust the carrying amount of the related asset.

Measurement of Changes in the Liability Due to the Passage of Time (Accretion Expense)

B56. Also for practical reasons, the Board decided that an entity should be required to measure accretion expense on the carrying amount of the liability by using the same credit-adjusted risk-free rate or rates used to initially measure the liability at fair value.

B57. The Board discussed whether it should specify how the amount representing a change in the liability due to the passage of time should be classified in the statement of operations. The revised Exposure Draft proposed that such a change was most appropriately described as interest expense and that, therefore, an entity should be required to classify it as such in its statement of operations. Respondents expressed concern about the classification as interest expense. Some respondents stated that financial statement users view interest expense as a financing cost arising from borrowing and lending transactions. They also stated that classifying the accretion of the liability as interest expense would distort certain financial ratios, hindering some entities' ability to satisfy current debt covenants and to obtain future borrowings. In response to those concerns, the Board decided that the only requirement should be that the period-to-period change in the liability be classified as a separate item in the operating portion of the income statement.

B58. The Board also discussed whether accretion expense on the liability for an asset retirement obligation should qualify for the pool of interest eligible for capitalization under the provisions of paragraph 12 of FASB Statement No. 34, *Capitalization of Interest Cost.* Specifically, paragraph 12 states that "the amount of interest cost to be capitalized for qualifying assets is intended to be that portion of the interest cost incurred during the assets' acquisition periods that theoretically could have been avoided … if expenditures for the assets had not been made." Paragraph 1 of Statement 34 states that "for the purposes of this Statement, *interest cost* includes interest recognized on obligations having explicit interest rates, interest imputed on certain types of payables in accordance with APB Opinion No. 21, *Interest on Receivables and Payables,* and interest related to a capital lease determined in accordance with FASB Statement No. 13, *Accounting for Leases*" (footnote reference omitted). The Board decided that accretion expense on the liability for an asset retirement obligation should not qualify for interest capitalization because it does not qualify as *interest cost* under the provisions of paragraph 1 of Statement 34.

Funding and Assurance Provisions

B59. In some circumstances, an entity is legally required to provide assurance that it will be able to satisfy its asset retirement obligations. That assurance may be accomplished by demonstrating that the financial resources and financial condition of the entity are sufficient to assure that it can meet those obligations. Other commonly used methods of providing assurance include surety

bonds, insurance policies, letters of credit, guarantees by other entities, and establishment of trust funds or identification of other funds for satisfying the asset retirement obligations.

B60. The effect of surety bonds, letters of credit, and guarantees is to provide assurance that third parties will provide amounts to satisfy the asset retirement obligations if the entity that has primary responsibility (the obligor) to do so cannot or does not fulfill its obligations. The possibility that a third party will satisfy the asset retirement obligations does not relieve the obligor from its primary responsibility for those obligations. If a third party is required to satisfy asset retirement obligations due to the failure or inability of the obligor to do so directly, the obligor would then have a liability to the third party. Established generally accepted accounting principles require that the entity's financial statements reflect its obligations even if it has obtained surety bonds, letters of credit, or guarantees by others. However, as discussed in paragraph 16 of this Statement, the effects of those provisions should be considered in adjusting the risk-free interest rate for the effect of the entity's credit standing to arrive at the credit-adjusted risk-free rate.

B61. The option of prepaying an asset retirement obligation may exist; however, it would rarely, if ever, be exercised because prepayment would not relieve the entity of its liability for future changes in its asset retirement obligations. Obtaining insurance for asset retirement obligations is currently as rare as prepayment of those obligations. Because of the limited instances, if any, in which prepayment of asset retirement obligations is made or insurance is acquired, the Board decided to address neither topic. However, the Board noted that even if insurance was obtained, the liability would continue to exist.

B62. In evaluating what effect, if any, assets identified to satisfy asset retirement obligations should have on the accounting and reporting of liabilities, the Board considered two approaches that would have resulted in reporting less than the amount of the present liability for an asset retirement obligation. Under one approach, any assets dedicated to satisfy the asset retirement obligation would, for financial reporting purposes, be offset against the liability. Under the other approach, those dedicated assets could be viewed as an extinguishment of the liability in whole or in part.

B63. Paragraph 7 of APB Opinion No. 10, *Omnibus Opinion—1966,* and FASB Interpretation No. 39, *Offsetting of Amounts Related to Certain Contracts,* establish the general criteria for offsetting of amounts in the statement of financial position. Paragraph 50 of Interpretation 39 discusses offsetting of trust funds established for nuclear decommissioning, which is one of the asset retirement obligations within the scope of this Statement. Those trust funds cannot be offset because the right of offset is not enforceable at law and the payees for costs of asset retirement obligations generally have not been identified at the reporting date.

B64. Some have suggested that trust funds established to meet obligations for pensions and other postretirement benefits are similar to the trust funds established for nuclear decommissioning. In FASB Statements No. 87, *Employers' Accounting for Pensions,*

and No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions,* the Board provided specific requirements to allow offsetting of plan assets in trust funds established for pension benefits and for other postretirement benefits against the related liabilities of those plans. The Board noted that the offsetting provisions in Statements 87 and 106 are exceptions influenced, in part, by then-existing practice. In addition, the offsetting allowed in Statements 87 and 106 is one part of an accounting model that also allows for delayed recognition in financial statements of the changes in the values of the plan assets and liabilities. This Statement provides for immediate recognition of changes in estimated cash flows related to asset retirement obligations. Changes in certain assets dedicated to satisfy those obligations that are subject to the provisions of FASB Statement No. 115, *Accounting for Certain Investments in Debt and Equity Securities,* would also be recognized immediately. The Board decided that it should not provide an exception to the general principle for offsetting in this Statement.

B65. FASB Statement No. 140, *Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities,* requires that a liability be derecognized if and only if either the debtor pays the creditor and is relieved of its obligation for the liability or the debtor is legally released from being the primary obligor under the liability. Therefore, a liability is not considered extinguished by an in-substance defeasance.

Leasing Transactions

B66. The Board considered whether to amend FASB Statement No. 13, *Accounting for Leases,* and related leasing literature to address asset retirement obligations associated with leased property. However, the Board chose not to amend the existing leasing literature for a number of reasons. When the Board undertook this project, it did not have as an objective a revision of the accounting requirements for leasing transactions. The Board realized that a revision of the existing leasing literature to incorporate the requirements of this Statement would be difficult to accomplish in a limited-scope amendment because of the requirements of the leasing literature with respect to present value measurements and certain concepts concerning how payments for the leased property and residual values affect the criteria for lease classification. Because those aspects of the leasing literature are interrelated and fundamental to the lease accounting model, the Board concluded that a wholesale amendment of the existing leasing literature would likely be required in order to conform the pertinent aspects of the lease accounting model to the accounting model in this Statement. The Board agreed that any substantial revision of the existing leasing literature should be addressed in a separate project. The Board also recognized that Statement 13 (as amended) already contains guidance for lessees with respect to certain obligations that meet the provisions in paragraph 2 of this Statement. The Board concluded that by including in the scope of this Statement all lessor obligations in connection with leased property that meet the provisions in paragraph 2 of this Statement and those lessee obligations in connection with leased property that meet the provisions in paragraph 2 of this Statement but do not meet the definition of either minimum lease payments or contingent rentals in paragraph 5 of Statement 13, it could retain substantially the same scope as it originally contemplated for this project without an amendment of the existing leasing literature.

Rate-Regulated Entities

B67. The Board considered how existing rate-making practices for entities subject to FASB Statement No. 71, *Accounting for the Effects of Certain Types of Regulation,* would affect the accounting by those entities for costs related to asset retirement obligations. The way in which those costs are treated for financial reporting purposes and the way in which they are treated for rate-making purposes often differ. The most common differences arise from different estimates by the entity and its regulator of the future cost of asset retirement activities. Those differences may relate to the estimates of the cost of performing asset retirement activities or the assumptions necessary to develop the estimated future cash flows required to satisfy those obligations. In addition, an entity may make revisions to its estimate of the obligation before a regulator considers those revisions in setting the entity's rates.

B68. Statement 71 requires, subject to meeting certain criteria, that the timing of recognition of certain revenues and expenses for financial reporting purposes conform to decisions or probable decisions of regulators responsible for setting the entity's rates. Because the practices of those regulators for allowing costs related to asset retirement activities are well established, the Board did not consider any future changes in those practices. The Board considered specific issues arising from current rate-making practices about the recognition of regulatory assets or liabilities for differences, if any, in the timing of recognition of costs for financial reporting and rate-making purposes. The Board also considered the appropriate method for recognition and measurement of impairment of the capitalized amount of an asset retirement cost for an asset subject to Statement 71.

B69. An entity is responsible for developing timely and reasonably accurate estimates of the cash flows related to asset retirement obligations. That responsibility is inherent in the preparation of external financial statements and may be a part of the entity's reporting to others in connection with its asset retirement obligations. The regulator that sets the entity's rates has a responsibility to both the entity and its customers to establish rates that are just and reasonable. Sometimes the responsibilities of the regulator and those of the regulated entity conflict, producing differences in the estimated costs related to asset retirement obligations as discussed in paragraph B67. Statement 71, as amended, specifies the general criteria for the recognition of regulatory assets and liabilities that result from differences, if any, in the timing of recognition of costs for financial reporting and rate-making purposes. FASB Statement No. 92, *Regulated Enterprises—Accounting for Phase-in Plans,* establishes more restrictive criteria for the recognition of regulatory assets in certain situations.

B70. The Board considered whether the general principles of Statement 71 should apply or whether specific criteria similar to those in Statement 92 should apply to the recognition of regulatory assets and liabilities that result from the circumstances described in paragraph B67. The Board concluded that judgment would be required in recognizing regulatory assets and liabilities because of the many reasons for differences between the obligations and costs related

to asset retirement obligations recognized for financial reporting and those considered for rate-making purposes. Therefore, the Board decided that the general principles in Statement 71 should be applied in recognizing regulatory assets and liabilities for those differences.

B71. The Board also considered the appropriate method for recognition and measurement of impairment of assets that include capitalized asset retirement costs for entities subject to Statement 71. In FASB Statement No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of,* the Board considered the issues of recognition and measurement of impairment of long-lived assets of rate-regulated entities. The Board concluded that no additional guidance was needed for recognition and impairment of capitalized assets that include capitalized retirement costs for rate-regulated entities.

B72. Paragraph 12 of this Statement requires that capitalized asset retirement costs be included in the assessment of impairment of long-lived assets. In recent years, several nuclear power plants have ceased operations, and the method and timing of their nuclear decommissioning are being considered. Some of those plants reached the end of their expected useful lives, and others closed prior to the end of their expected useful lives. The actual decommissioning may begin immediately after plant closure or it may be deferred until some future time. In either case, the Board decided that FASB Statement No. 90, *Regulated Enterprises—Accounting for Abandonments and Disallowances of Plant Costs,* should apply to asset retirement costs recognized under the provisions of this Statement in the same way that it applies to other costs of closed or abandoned facilities of rate-regulated entities.

B73. Many rate-regulated entities currently provide for the costs related to asset retirement obligations in their financial statements and recover those amounts in rates charged to their customers. Some of those costs relate to asset retirement obligations within the scope of this Statement; others are not within the scope of this Statement and, therefore, cannot be recognized as liabilities under its provisions. The objective of including those amounts in rates currently charged to customers is to allocate costs to customers over the lives of those assets. The amount charged to customers is adjusted periodically to reflect the excess or deficiency of the amounts charged over the amounts incurred for the retirement of long-lived assets. The Board concluded that if asset retirement costs are charged to customers of rate-regulated entities but no liability is recognized, a regulatory liability should be recognized if the requirements of Statement 71 are met.

Disclosures

B74. The Board believes that the financial statement disclosures required by this Statement will provide information that will be useful in understanding the effects of a liability for an asset retirement obligation on a particular entity and that those disclosures can be prepared without encountering undue complexities or significant incremental costs. The Board decided that information about the general nature of an asset retirement obligation and the related long-lived asset is a fundamental and necessary disclosure.

B75. The Board believes that information about assets that are legally restricted for purposes of settling asset retirement obligations is important to financial statement users and should be disclosed.

B76. The Board considered whether it should require disclosure of other measures of a liability for an asset retirement obligation (for example, current cost, future cost, undiscounted expected cash flows, or entity-specific value). Because the Board decided to require the initial measurement of the liability at fair value, it decided that disclosure of other amounts based on other measurement objectives are inappropriate.

B77. The Board believes that a reconciliation showing the changes in the aggregate carrying amount of the asset retirement obligation would sometimes be useful. Components of the change include (a) liabilities incurred in the current period, (b) liabilities settled in the current period, (c) accretion expense, and (d) revisions resulting from changes in expected cash flows. To reduce the burden on preparers, the Board concluded that a reconciliation showing the changes in the asset retirement obligation would be required only when a significant change occurs in one or more of those components during the reporting period.

B78. Some of the disclosures required by this Statement were proposed by the EEI in its request that the Board consider adding a project on removal costs to its agenda. The Board also received input from some users of financial statements indicating that the disclosures required by this Statement would be useful in understanding the asset retirement obligations of an entity.

Effective Date

B79. This Statement is effective for financial statements issued for fiscal years beginning after June 15, 2002. The Board believes that the effective date provides adequate time for an entity that previously had not reported information about an asset retirement obligation to determine whether any such obligation exists. Furthermore, the Board believes that the effective date provides adequate time for all entities with asset retirement obligations to develop the necessary information to apply the requirements of this Statement. The Board encourages early application of this Statement.

Transition

B80. The transition provisions in the initial Exposure Draft would have required an entity to recognize balance sheet amounts for (a) a closure or removal liability adjusted for the cumulative period costs caused by changes in the present value of that liability due to the passage of time, (b) the capitalized costs of closure or removal, and (c) the related accumulated depreciation of the capitalized costs. The difference between those amounts and the amount recognized in the statement of financial position under present practice would have been recognized as a cumulative-effect adjustment in the period in which the Statement was adopted. The initial Exposure Draft would have required that an entity measure transition amounts by applying its provisions as if the initial Exposure Draft had been in effect when the closure or removal

obligation was incurred and without the benefit of hindsight. However, if an entity could not make a reasonable approximation of those amounts based solely on information known in previous periods, it could measure those amounts using current information.

B81. Many respondents to the initial Exposure Draft agreed with its recognition provisions (for example, a cumulative-effect adjustment) but disagreed with the requirement to use information from previous periods to measure transition amounts. They stressed that such a requirement was overly complex and unjustified because it would require an entity to use old cost studies, update the asset calculation with newer studies, and use interest rates in effect when the obligations were incurred. Some respondents further indicated that a requirement to use information from previous periods would only result in the *appearance* of accuracy.

Measurement of Transition Amounts

B82. The Board discussed whether it should retain in this Statement the requirement in the initial Exposure Draft to measure transition amounts by applying the provisions of this Statement based on information available when an obligation was incurred. That requirement would have entailed retroactively measuring the initial fair value of a liability for an asset retirement obligation and using that same amount as a basis for recognizing the amount to be capitalized as part of the cost of the long-lived asset. Those amounts would then have been used to calculate depreciation related to the long-lived asset and accretion expense on the liability. To measure those amounts retroactively, an entity would have been required to determine historical data and assumptions about the economic environment that would have been considered at the date or dates that (a) a liability for an asset retirement obligation was incurred and (b) any subsequent revisions to cash flow estimates were made.

B83. The Board reasoned that although some entities may have data and assumptions in their historical records related to measurements that were already being made (for example, under the provisions of Statement 19), those records may not include sufficient information to retroactively employ the fair value measurement approach required by this Statement. Furthermore, the Board acknowledged that many entities that are required to apply the provisions of this Statement have not been accounting for asset retirement obligations in present practice because they were not required to do so. The Board concluded that it would not only be costly, but also difficult if not impossible, to reconstruct historical data and assumptions without incorporating the benefit of hindsight.

B84. The Board decided that, at transition, an entity should measure the fair value of a liability for an asset retirement obligation and the corresponding capitalized cost at the date the liability was initially incurred using current (that is, as of the date of adoption of this Statement) information, current assumptions, and current interest rates. That initial fair value of the liability and initial capitalized cost should be used as the basis for measuring depreciation expense and accretion expense for the time period from the date the liability was incurred to the date of adoption of this Statement.

Recognition of Transition Amounts

B85. The Board considered requiring the changes in accounting that result from the application of this Statement to be recognized (a) as the cumulative effect, based on a retroactive computation, of initially applying a new accounting principle, (b) by restating the financial statements of prior periods, or (c) prospectively, for example, over the remaining life of the long-lived asset. The Board also considered two simplified approaches to recognizing the changes in accounting that result from the application of this Statement.

B86. A cumulative-effect approach results in the immediate recognition and measurement of liability, asset, and accumulated depreciation amounts consistent with the provisions of this Statement. The difference between those amounts and any amounts that had been recognized in the statement of financial position prior to application of this Statement are reported as a cumulative-effect adjustment in the income statement of the period in which this Statement is initially applied. Consistent with paragraph 21 of APB Opinion No. 20, *Accounting Changes,* an entity is required to disclose the pro forma effects of retroactive application for income before extraordinary items and net income (and the related per-share amounts) for all periods presented.

B87. Restatement, like a cumulative-effect approach, results in the immediate recognition and measurement of liability, asset, and accumulated depreciation amounts consistent with the provisions of this Statement. However, restatement differs from a cumulative-effect approach because prior-period financial statements would be restated to conform to the provisions of this Statement. Therefore, in financial statements presented for comparative purposes, financial statement users would be able to assess the impact of this Statement on income statement and balance sheet amounts.

B88. A prospective approach would result in the delayed recognition or adjustment of a liability for an asset retirement obligation as well as corresponding amounts to the long-lived asset and accumulated depreciation measured under the provisions of this Statement. Under a prospective approach, an entity would neither recognize a cumulative-effect adjustment in the income statement of the period in which this Statement is initially applied nor restate financial statements of previous periods affected by this Statement. Instead, all of the income statement effects related to initial application of this Statement would be recognized in future accounting periods.

B89. When compared with either a cumulative-effect approach or restatement, the Board decided that a prospective approach to transition provides the least useful financial statement information because asset retirement obligations that existed prior to the adoption of this Statement would not be reflected in the financial statements upon adoption of this Statement. For that reason, the Board decided against a prospective approach to transition.

B90. The Board discussed whether a cumulative-effect approach and restatement provide equally useful financial statement information. It acknowledged that restatement would provide

more useful information because prior-period balance sheet amounts and prior-period income statement amounts would be restated to reflect the provisions of this Statement. However, some rate-regulated entities expressed concern that if restatement resulted in recognition of additional expenses in prior periods, those expenses might not be recovered in current or future rates. The Board decided that a cumulative-effect approach would provide sufficient information if, in addition to disclosure of the pro forma income statement amounts required by paragraphs 19(c), 19(d), and 21 of Opinion 20, an entity also disclosed on a pro forma basis for the beginning of the earliest year presented and for the ends of all years presented the balance sheet amounts for the liability for asset retirement obligations as if this Statement had been applied during all periods affected. Therefore, the Board decided to require a cumulative-effect approach as described in Opinion 20 with additional prior-period balance sheet disclosures.

B91. The Board also considered, but rejected, two simplified approaches to recognition of transition amounts. Both approaches would have required that an entity recognize a liability for an asset retirement obligation at fair value upon initial application of the provisions of this Statement. The difference between the fair value of the obligation and any amount presently recognized in the balance sheet for that obligation would have been recognized as either (a) an increase or a decrease in the associated long-lived asset or (b) a cumulative-effect adjustment in the income statement of the period of initial application of this Statement. Neither of those approaches would have resulted in the recognition of an amount of accumulated depreciation related to an asset retirement cost.

B92. The Board decided that even though the simplified approaches would have been easier to apply than either a cumulative-effect approach or restatement, except for recognition of a liability for an asset retirement obligation at fair value, they would not have provided financial statement information that is consistent with the provisions of this Statement. Furthermore, both of the simplified approaches would have resulted in an arbitrary amount being recognized as either an asset or a cumulative-effect adjustment. The Board agreed that the simplified approaches would have provided less useful financial statement information than either the cumulative-effect approach or restatement.

Appendix C: ILLUSTRATIVE EXAMPLES—RECOGNITION AND MEASUREMENT PROVISIONS

C1. This appendix includes four examples that illustrate the recognition and measurement provisions of this Statement. Example 1 illustrates (a) initial measurement of a liability for an asset retirement obligation using an expected present value technique, (b) subsequent measurement assuming that there are no changes in estimated cash flows, and (c) settlement of the asset retirement obligation liability (ARO liability) at the end of its term. Example 2 is similar to Example 1. However, Example 2 illustrates subsequent measurement of an ARO liability after a change in estimated cash flows. Example 3 highlights the recognition and

measurement provisions of this Statement for an ARO liability that is incurred over more than one reporting period. Example 4 illustrates accounting for asset retirement obligations that are conditional and that have a low likelihood of enforcement.

C2. The examples in this appendix and those in Appendixes D and E incorporate simplified assumptions to provide guidance in implementing this Statement. For instance, Examples 1 and 2 relate to the asset retirement obligation associated with an offshore production platform that also would likely have individual wells and production facilities that would have separate asset retirement obligations. Those examples also assume straight-line depreciation, even though, in practice, depreciation would likely be applied using a units-of-production method. Other simplifying assumptions are used throughout the examples.

Example 1

C3. Example 1 depicts an entity that completes construction of and places into service an offshore oil platform on January 1, 2003. The entity is legally required to dismantle and remove the platform at the end of its useful life, which is estimated to be 10 years. Based on the requirements of this Statement, on January 1, 2003, the entity recognizes a liability for an asset retirement obligation and capitalizes an amount for an asset retirement cost. The entity estimates the initial fair value of the liability using an expected present value technique. The significant assumptions used in that estimate of fair value are as follows:

a. Labor costs are based on current marketplace wages required to hire contractors to dismantle and remove offshore oil platforms. The entity assigns probability assessments to a range of cash flow estimates as follows:

Cash Flow Estimate	Probability Assessment	Expected Cash Flows
$100,000	25%	$ 25,000
125,000	50	62,500
175,000	25	43,750
		$131,250

b. The entity estimates allocated overhead and equipment charges using the rate it applies to labor costs for transfer pricing (80 percent). The entity has no reason to believe that its overhead rate differs from those used by contractors in the industry.
c. A contractor typically adds a markup on labor and allocated internal costs to provide a profit margin on the job. The rate used (20 percent) represents the entity's understanding of the profit that contractors in the industry generally earn to dismantle and remove offshore oil platforms.

d. A contractor would typically demand and receive a premium (market risk premium) for bearing the uncertainty and unforeseeable circumstances inherent in "locking in" today's price for a project that will not occur for 10 years. The entity estimates the amount of that premium to be 5 percent of the estimated inflation-adjusted cash flows.
e. The risk-free rate of interest on January 1, 2003, is 5 percent. The entity adjusts that rate by 3.5 percent to reflect the effect of its credit standing. Therefore, the credit-adjusted risk-free rate used to compute expected present value is 8.5 percent.
f. The entity assumes a rate of inflation of 4 percent over the 10-year period.

C4. On December 31, 2012, the entity settles its asset retirement obligation by using its internal workforce at a cost of $351,000. Assuming no changes during the 10-year period in the cash flows used to estimate the obligation, the entity would recognize a gain of $89,619 on settlement of the obligation:

Labor	$195,000
Allocated overhead and equipment charges (80 percent of labor)	156,000
Total costs incurred	351,000
ARO liability	440,619
Gain on settlement of obligation	$ 89,619

Initial Measurement of the ARO Liability at January 1, 2003

	Expected Cash Flows 1/1/03
Expected labor costs	$131,250
Allocated overhead and equipment charges (.80 × $131,250)	105,000
Contractor's markup [.20 × ($131,250 + $105,000)]	47,250
Expected cash flows before inflation adjustment	283,500
Inflation factor assuming 4 percent rate for 10 years	1.4802
Expected cash flows adjusted for inflation	419,637
Market-risk premium (.05 × $419,637)	20,982
Expected cash flows adjusted for market risk	$440,619
Present value using credit-adjusted risk-free rate of 8.5 percent for 10 years	$194,879

Interest Method of Allocation

Year	Liability Balance 1/1	Accretion	Liability Balance 12/31
2003	$194,879	$16,565	$211,444
2004	211,444	17,973	229,417
2005	229,417	19,500	248,917
2006	248,917	21,158	270,075
2007	270,075	22,956	293,031
2008	293,031	24,908	317,939
2009	317,939	27,025	344,964
2010	344,964	29,322	374,286
2011	374,286	31,814	406,100
2012	406,100	34,519	440,619

Schedule of Expenses

Year-End	Accretion Expense	Depreciation Expense	Total Expense
2003	$16,565	$19,488	$36,053
2004	17,973	19,488	37,461
2005	19,500	19,488	38,988
2006	21,158	19,488	40,646
2007	22,956	19,488	42,444
2008	24,908	19,488	44,396
2009	27,025	19,488	46,513
2010	29,322	19,488	48,810
2011	31,814	19,488	51,302
2012	34,519	19,488	54,007

Journal Entries

January 1, 2003:		
Long-lived asset (asset retirement cost)	194,879	
ARO liability		194,879
To record the initial fair value of the ARO liability		
December 31, 2003–2012:		
Depreciation expense (asset retirement cost)	19,488	
Accumulated depreciation		19,488
To record straight-line depreciation on the asset retirement cost		
Accretion expense	Per schedule	
ARO liability		Per schedule
To record accretion expense on the ARO liability		
December 31, 2012:		
ARO liability	440,619	
Wages payable		195,000
Allocated overhead and equipment charges (.80 × $195,000)		156,000
Gain on settlement of ARO liability		89,619
To record settlement of the ARO liability		

Example 2

C5. Example 2 is the same as Example 1 with respect to initial measurement of the ARO liability. In this example, the entity's credit standing improves over time, causing the credit-adjusted risk-free rate to decrease by .5 percent to 8 percent at December 31, 2004.

C6. On December 31, 2004, the entity revises its estimate of labor costs to reflect an increase of 10 percent in the marketplace. In addition, it revises the probability assessments related to those labor costs. The change in labor costs results in an upward revision to the undiscounted cash flows; consequently, the incremental cash flows are discounted at the current rate of 8 percent. All other assumptions remain unchanged. The revised estimate of expected cash flows for labor costs is as follows:

Cash Flow Estimate	Probability Assessment	Expected Cash Flows
$110,000	30%	$ 33,000
137,500	45	61,875
192,500	25	48,125
		$143,000

C7. On December 31, 2012, the entity settles its asset retirement obligation by using an outside contractor. It incurs costs of $463,000, resulting in the recognition of a $14,091 gain on settlement of the obligation:

ARO liability	$477,091
Outside contractor	463,000
Gain on settlement of obligation	$ 14,091

Initial Measurement of the ARO Liability at January 1, 2003

	Expected Cash Flows 1/1/03
Expected labor costs	$131,250
Allocated overhead and equipment charges (.80 × $131,250)	105,000
Contractor's markup [.20 × ($131,250 + $105,000)]	47,250
Expected cash flows before inflation adjustment	283,500
Inflation factor assuming 4 percent rate for 10 years	1.4802
Expected cash flows adjusted for inflation	419,637
Market-risk premium (.05 × $419,637)	20,982
Expected cash flows for market risk	$440,619
Present value using credit-adjusted risk-free rate of 8.5 percent for 10 years	$194,879

Subsequent Measurement of the ARO Liability Reflecting a Change in Labor Cost Estimate as of December 31, 2004

	Revised Expected Cash Flows 12/31/04
Incremental expected labor costs ($143,000 – $131,250)	$11,750

Allocated overhead and equipment charges (.80 × $11,750)	9,400
Contractor's markup [.20 × ($11,750 + $9,400)]	4,230
Expected cash flows before inflation adjustment	25,380
Inflation factor assuming 4 percent rate for 8 years	1.3686
Expected cash flows adjusted for inflation	34,735
Market-risk premium (.05 × $34,735)	1,737
Expected cash flows adjusted for market risk	$36,472
Present value of incremental liability using credit-adjusted risk-free rate of 8 percent for 8 years	$19,704

Interest Method of Allocation

Year	Liability Balance 1/1	Accretion	Change in Cash Flow Estimate	Liability Balance 12/31
2003	$194,879	$16,565		$211,444
2004	211,444	17,973	$19,704	249,121*
2005	249,121	21,078		270,199
2006	270,199	22,862		293,061
2007	293,061	24,796		317,857
2008	317,857	26,894		344,751
2009	344,751	29,170		373,921
2010	373,921	31,638		405,559
2011	405,559	34,315		439,874
2012	439,874	37,217		477,091

*The remainder of this table is an aggregation of two layers: the original liability, which is accreted at a rate of 8.5%, and the new incremental liability, which is accreted at a rate of 8.0%.

Schedule of Expenses

Year-End	Accretion Expense	Depreciation Expense	Total Expense
2003	$16,565	$19,488	$36,053
2004	17,973	19,488	37,461
2005	21,078	21,951	43,029
2006	22,862	21,951	44,813
2007	24,796	21,951	46,747

2008	26,894	21,951	48,845
2009	29,170	21,951	51,121
2010	31,638	21,951	53,589
2011	34,315	21,951	56,266
2012	37,217	21,951	59,168

Journal Entries

January 1, 2003:

Long-lived asset (asset retirement cost)	194,879	
ARO liability		194,879
To record the initial fair value of the ARO liabiity		

December 31, 2003:

Depreciation expense (asset retirement cost)	19,488	
Accumulated depreciation		19,488
To record straight-line depreciation on the asset retirement cost		
Accretion expense	16,565	
ARO liability		16,565
To record accretion expense on the ARO liability		

December 31, 2004:

Depreciation expense (asset retirement cost)	19,488	
Accumulated depreciation		19,488
To record straight-line depreciation on the asset retirement cost		
Accretion expense	17,973	
ARO liability		17,973
To record accretion expense on the ARO liability		
Long-lived asset (asset retirement cost)	19,704	
ARO liability		19,704
To record the change in estimated cash flows		

December 31, 2005–2012:

Depreciation expense (asset retirement cost)	21,951	
Accumulated depreciation		21,951
To record straight-line depreciation on the asset retirement cost adjusted for the change in cash flow estimate		

Accretion expense		
ARO liability	Per schedule	Per schedule
To record accretion expense on the ARO liability		

December 31, 2012:

ARO liability	477,091	
Gain on settlement of ARO liability		14,091
Accounts payable (outside contractor)		463,000
To record settlement of the ARO liability		

Example 3

C8. Example 3 depicts an entity that places a nuclear utility plant into service on December 31, 2003. The entity is legally required to decommission the plant at the end of its useful life, which is estimated to be 20 years. Based on the requirements of this Statement, the entity recognizes a liability for an asset retirement obligation and capitalizes an amount for an asset retirement cost over the life of the plant as contamination occurs. The following schedule reflects the undiscounted expected cash flows and respective credit-adjusted risk-free rates used to measure each portion of the liability through December 31, 2005, at which time the plant is 90 percent contaminated.

Date	Undiscounted Expected Cash Flows	Credit-Adjusted Risk-Free Rate
12/31/03	$23,000	9.0%
12/31/04	1,150	8.5
12/31/05	1,900	9.2

C9. On December 31, 2005, the entity increases by 10 percent its estimate of undiscounted expected cash flows that were used to measure those portions of the liability recognized on December 31, 2003, and December 31, 2004. Because the change results in an upward revision to the undiscounted estimated cash flows, the incremental estimated cash flow is discounted at the current credit-adjusted risk-free rate of 9.2 percent. As a result, $2,300 (10 percent of $23,000) plus $115 (10 percent of $1,150) plus $1,900 (resulting from contamination in 2005), which totals $4,315 of incremental undiscounted cash flows are discounted at the then current credit-adjusted risk-free rate of 9.2 percent and recorded as a liability on December 31, 2005.

	Date Incurred		
	12/31/03	**12/31/04**	**12/31/05**
Initial measurement of the ARO liability:			
Expected cash flows adjusted for market risk	$23,000	$1,150	$1,900
Credit-adjusted risk-free rate	9.00%	8.50%	9.20%
Discount period in years	20	19	18
Expected present value	$4,104	$244	$390
Measurement of revision in expected cash flows occurring on December 31, 2005:			
Revision in expected cash flows (increase of 10 percent) [($23,000 × 10%) + ($1,150 × 10%)]			$2,415
Credit-adjusted risk-free rate			9.20%
Discount period remaining in years			18
Expected present value			$495

Carrying Amount of Liability Incurred in 2003

Year	Liability Balance 1/1	Accretion (9.0%)	New Liability	Liability Balance 12/31
2003			$4,104	$4,104
2004	$4,104	$369		4,473
2005	4,473	403		4,876

Carrying Amount of Liability Incurred in 2004

Year	Liability Balance 1/1	Accretion (8.5%)	New Liability	Liability Balance 12/31
2004			$244	$244
2005	$244	$21		265

Carrying Amount of Liability Incurred in 2005
Plus Effect of Change in Estimated Cash Flows

Year	Liability Balance 1/1	Accretion (9.2%)	Change in Cash Flow Estimate	New Liability	Liability Balance 12/31
2005			$495	$390	$885

Carrying Amount of Total Liability

Year	Liability Balance 1/1	Accretion	Change in Cash Flow Estimate	New Liability	Total Carrying Amount 12/31
2003				$4,104	$4,104
2004	$4,104	$369		244	4,717
2005	4,717	424	$495	390	6,026

Journal Entries

December 31, 2003:

Long-lived asset (asset retirement cost)	4,104	
ARO liability		4,104
To record the initial fair value of the ARO liability incurred this period		

December 31, 2004:

Depreciation expense ($4,104 ÷ 20)	205	
Accumulated depreciation		205
To record straight-line depreciation on the asset retirement cost		
Accretion expense	369	
ARO liability		369
To record accretion expense on the ARO liability		
Long-lived asset (asset retirement cost)	244	
ARO liability		244

To record the initial fair value of the ARO liability incurred this period

December 31, 2005:

Depreciation expense [($4,104 ÷ 20) + ($244 ÷ 19)]	218	
Accumulated depreciation		218
To record straight-line depreciation on the asset retirement cost		
Accretion expense	424	
ARO liability		424
To record accretion expense on the ARO liability		
Long-lived asset (asset retirement cost)	495	
ARO liability		495
To record the change in liability resulting from a revision in expected cash flow		
Long-lived asset (asset retirement cost)	390	
ARO liability		390
To record the initial fair value of the ARO liability incurred this period		

Example 4

C10. Example 4 illustrates a timber lease [26] wherein the lessor has an option to require the lessee to settle an asset retirement obligation. Assume an entity enters into a five-year lease agreement that grants it the right to harvest timber on a tract of land and that agreement grants the lessor an option to require that the lessee reforest the underlying land at the end of the lease term. Based on past history, the lessee believes that the likelihood that the lessor will exercise that option is low. Rather, at the end of the lease, the lessor will likely accept the land without requiring reforestation. The lessee estimates that there is only a 10 percent probability that the lessor will elect to enforce reforestation.

C11. At the end of the first year, 20 percent of the timber has been harvested. The lessee estimates that the fair value of performing reforestation activities in 4 years for the portion of the land that has been harvested will be $300,000. When estimating the fair value of the ARO liability to be recorded, the lessee incorporates the probability that the restoration provisions will not be enforced:

Cash Flow Estimate	Probability Assessment	Expected Cash Flows
$300,000	10%	$30,000
0	90	0
		$30,000
Present value using credit-adjusted risk-free rate of 8.5 percent for 4 years		$21,647

C12. During the term of the lease, the lessee should reassess the likelihood that the lessor will require reforestation. For example, if the lessee subsequently determines that the likelihood of the lessor electing the reforestation option has increased, that change will result in a change in the estimate of future cash flows and be accounted for as illustrated in Example 2.

Appendix D: ILLUSTRATIVE EXAMPLES—TRANSITION PROVISIONS

D1. This appendix includes four examples that illustrate application of the transition provisions assuming that this Statement is adopted on January 1, 2003 (calendar-year-ends 2001 and 2002 are shown for illustration purposes). Therefore, for measurement purposes, the examples use information and assumptions to derive cash flow estimates related to asset retirement obligations at January 1, 2003. Additionally, the January 1, 2003, risk-free rate adjusted for the effect of the entity's credit standing is 8.5 percent.

Example 1

D2. Example 1 depicts an entity that has not been recognizing amounts related to an asset retirement obligation because no requirement existed. Therefore, in Example 1, prior to adoption of this Statement, no amounts are recognized for an asset retirement obligation in the statement of financial position.

D3. In addition to the assumptions described in paragraph D1, other significant assumptions in Example 1 are as follows:

a. The long-lived asset to which the asset retirement obligation relates was acquired on January 1, 1993, and is estimated to have a useful life of 15 years.
b. 100 percent of the asset retirement obligation occurred at acquisition.
c. The entity uses straight-line depreciation.
d. At January 1, 2003, undiscounted expected cash flows that will be required to satisfy the ARO liability in 2008 are $3 million. Discounting at an 8.5 percent credit-adjusted risk-free rate, the present value of the ARO liability at January 1, 1993, is $882,000.

D4. The interest allocation table, amounts measured under the provisions of this Statement, and journal entries to record the transition amounts are shown below (in thousands).

Interest Allocation Table
(8.5% Credit-Adjusted Risk-Free Rate)

Year	Liability Balance 1/1	Accretion	Liability Balance 12/31
1993	$ 882	$ 75	$ 957
1994	957	81	1,038
1995	1,038	88	1,126
1996	1,126	96	1,222

1997	1,222	104	1,326
1998	1,326	113	1,439
1999	1,439	122	1,561
2000	1,561	133	1,694
2001	1,694	144	1,838
2002	1,838	156	1,994
2003	1,994	170	2,164
2004	2,164	184	2,348
2005	2,348	200	2,548
2006	2,548	217	2,765
2007	2,765	235	3,000

Transition Amounts Required by the Provisions of ARO Statement

	1/1/93–12/31/00	2001	2002
Liability 1/1	$ 882	$1,694	$1,838
Accretion	812	144	156
Liability 12/31	$1,694	$1,838	$1,994
Asset		$ 882	$ 882
Amount capitalized	$ 882	—	—
Asset 12/31	$ 882	$ 882	$ 882
Accumulated depreciation 1/1		$ 472	$ 531
Depreciation expense ($882 ÷ 15)	$ 472*	59	59
Accumulated depreciation 12/31	$ 472	$ 531	$ 590

*$59 × 8 = $472

Journal Entry Required at Transition (1/1/03)

Cumulative-effect adjustment	1,702	
Long-lived asset	882	
Accumulated depreciation		590
Liability for an asset retirement obligation		1,994

Example 2

D5. Example 2 depicts an entity that has been recognizing amounts related to an asset retirement obligation under the provisions of Statement 19. Prior to adoption of this Statement, amounts have been recognized in the statement of financial position as accumulated depreciation. The entity would have previously recognized expense in the income statement under the provisions of Statement 19.

D6. Significant assumptions in Example 2 are as follows:

a. The long-lived asset to which the asset retirement obligation relates was acquired on January 1, 1999, and is estimated to have a useful life of 15 years.
b. 100 percent of the asset retirement obligation occurs at acquisition.
c. The entity uses straight-line depreciation.
d. At January 1, 2003, undiscounted expected cash flows that will be required to satisfy the ARO liability in 2014 are $75 million. Discounting at an 8.5 percent credit-adjusted risk-free rate, the present value of the ARO liability at January 1, 1999, is $22.060 million. That is also the amount that would have been capitalized as an increase to the carrying amount of the long-lived asset at acquisition.
e. The estimated (undiscounted) retirement obligation under the provisions of Statement 19 was $67 million. The entity had been accruing that amount on a straight-line basis over 15 years by recognizing an expense and a credit to accumulated depreciation in the amount of $4.467 million per year.

D7. The interest allocation table, amounts measured under the provisions of this Statement, amounts recognized and measured under the provisions of Statement 19, and journal entries to record the transition amounts are shown below (in thousands).

Interest Allocation Table
(8.5% Credit-Adjusted Risk-Free Rate)

Year	Liability Balance 1/1	Accretion	Liability Balance 12/31
1999	$22,060	$1,875	$23,935
2000	23,935	2,035	25,970
2001	25,970	2,207	28,177
2002	28,177	2,395	30,572
2003	30,572	2,599	33,171
2004	33,171	2,820	35,991
2005	35,991	3,059	39,050
2006	39,050	3,319	42,369

2007	42,369	3,601	45,970
2008	45,970	3,907	49,877
2009	49,877	4,240	54,117
2010	54,117	4,600	58,717
2011	58,717	4,991	63,708
2012	63,708	5,415	69,123
2013	69,123	5,877	75,000

Transition Amounts Required by the Provisions of ARO Statement

	1999	2000	2001	2002
Liability 1/1		$23,935	$25,970	$28,177
Accretion	$ 1,875	2,035	2,207	2,395
Liability incurred	22,060	—	—	—
Liability 12/31	$23,935	$25,970	$28,177	$30,572
Asset 1/1		$22,060	$22,060	$22,060
Amount capitalized	$22,060	—	—	—
Asset 12/31	$22,060	$22,060	$22,060	$22,060
Accumulated depreciation 1/1		$ 1,471	$ 2,942	$ 4,413
Depreciation expense ($22,060 ÷ 15)	$ 1,471	1,471	1,471	1,471
Accumulated depreciation 12/31	$ 1,471	$ 2,942	$ 4,413	$ 5,884

Amounts Recorded under the Provisions of Statement 19

	1999	2000	2001	2002
Accumulated depreciation 1/1		$ 4,467	$ 8,934	$13,401
Accrued expense (estimated costs of $67 million)	$ 4,467	4,467	4,467	4,467
Accumulated depreciation 12/31	$ 4,467	$ 8,934	$13,401	$17,868

Journal Entry Required at Transition (1/1/03)

Accumulated depreciation (Statement 19)	17,868	
Long-lived asset (Statement 143)	22,060	
Accumulated depreciation (Statement 143)		5,884
Liability for an asset retirement obligation (Statement 143)		30,572
Cumulative-effect adjustment		3,472

Example 3

D8. Example 3 depicts an entity that has been recognizing amounts related to an asset retirement obligation under the provisions of Statement 19. The entity incurs 90 percent, 8 percent, and 2 percent of the asset retirement obligation over the first 3 years of the life of the asset, respectively. In Example 2, the entity incurred 100 percent of the asset retirement obligation upon acquisition.

D9. Significant assumptions in Example 3 are as follows:

a. The long-lived asset to which the asset retirement obligation relates was acquired on January 1, 1986, and is estimated to have a useful life of 20 years.
b. Upon transition to this Statement, the entity has incurred 100 percent of the asset retirement obligation. However, as discussed in paragraph D8, that obligation was incurred over the first three years of the life of the asset.
c. The entity uses straight-line depreciation.
d. At January 1, 2003, undiscounted expected cash flows that will be required to satisfy the ARO liability in 2006 are $250 million. Discounting at an 8.5 percent credit-adjusted risk-free rate, the present value of the ARO liability at January 1, 2003, is $195.726 million.
e. The total estimated (undiscounted) retirement obligation under the provisions of Statement 19 was $220 million. As of January 1, 2003, $186.785 million of that amount had been accrued.

D10. The following table shows (by year) the undiscounted expected cash flows incurred under the provisions of this Statement and the amounts estimated under the provisions of Statement 19 (in thousands).

		ARO Statement	**Statement 19**
Date	**Percentage of Total Costs Incurred**	**Undiscounted Expected Cash Flows**	**Estimated Retirement Costs**
1/1/86	90%	$225,000	$198,000
1/1/87	8	20,000	17,600
1/1/88	2	5,000	4,400
	100%	$250,000	$220,000

D11. The interest allocation table, amounts measured under the provisions of this Statement, amounts recognized and measured under the provisions of Statement 19, and journal entries to record the transition amounts are shown below (in thousands).

Interest Allocation Table (8.5% Credit-Adjusted Risk-Free Rate)

Year	Liability Balance 1/1	Accretion	Liability Balance 12/31
2000	$153,236*	$13,025	$166,261
2001	166,261	14,132	180,393
2002	180,393	15,333	195,726
2003	195,726	16,637	212,363
2004	212,363	18,051	230,414
2005	230,414	19,586	250,000

*$153,236 = present value of $250,000, 8.5%, 6 years

Transition Amounts Required by the Provisions of ARO Statement

	2000	2001	2002
Liability 1/1	$153,236	$166,261	$180,393
Accretion	13,025	14,132	15,333
Liability 12/31	$166,261	$180,393	$195,726
Asset 1/1:			
Capitalized 1/1/86 (PV of $225,000, 8.5%, 20 yrs.)	$ 44,014	$ 44,014	$ 44,014
Capitalized 1/1/87 (PV of $20,000, 8.5%, 19 yrs.)	4,245	4,245	4,245
Capitalized 1/1/88 (PV of $5,000, 8.5%, 18 yrs.)	1,151	1,151	1,151
Asset 12/31	$ 49,410	$ 49,410	$ 49,410
Accumulated depreciation 1/1:		$ 36,970	$ 39,458
Capitalized 1/1/86 [($44,014 ÷ 20) × 14]	$ 30,810		
Capitalized 1/1/87 [($4,245 ÷ 19) × 13]	2,904		
Capitalized 1/1/88 [($1,151 ÷ 18) × 12]	768		
Depreciation expense [($44,014 ÷ 20) + ($4,245 ÷ 19) + ($1,151 ÷ 18)]	2,488	2,488	2,488
Accumulated depreciation 12/31	$ 36,970	$ 39,458	$ 41,946

Amounts Recorded under the Provisions of Statement 19

	2000	2001	2002
Accumulated depreciation 1/1:		$164,645	$175,715
1/1/86 accrual [($198,000 ÷ 20) × 14]	$138,600		
1/1/87 accrual [($17,600 ÷ 19) × 13]	12,042		
1/1/88 accrual [($4,400 ÷ 18) × 12]	2,933		
Accrued expense [($198,000 ÷ 20) + ($17,600 ÷ 19) + ($4,400 ÷ 18)]	11,070	11,070	11,070
Accumulated depreciation 12/31	$164,645	$175,715	$186,785

Journal Entry Required at Transition (1/1/03)

Cumulative-effect adjustment	1,477	
Accumulated depreciation (Statement 19)	186,785	
Long-lived asset (Statement 143)	49,410	
Accumulated depreciation (Statement 143)		41,946
Liability for an asset retirement obligation (Statement 143)		195,726

Example 4

D12. Example 4 illustrates transition accounting for an oil field composed of numerous individual wells that has been in production for several years before adoption of this Statement. In periods prior to the adoption of this Statement, the entity had been recognizing amounts related to an asset retirement obligation under the provisions of Statement 19. Those amounts have been recognized on the balance sheet as a liability.

D13. Additional assumptions related to this example are as follows:

a. The oil field was discovered in 1990. Production started in 1993.
b. The producing platform is a concrete structure that supports 35 individual wells.
c. The estimated reserves at the time of discovery was 465 millions of barrels of oil equivalent (mmboe) with an expected production life of 20 years.
d. At the time of adoption of this Statement, cumulative production at the site is 300 mmboe, and remaining reserves are estimated to be 250 mmboe. (The increase in reserves is due to enhanced recovery methods.)
e. The amount of ARO liability accrued under Statement 19 at the time of adoption of this Statement on January 1, 2003, was $750,000. [27]
f. The estimated undiscounted cash flows for the asset retirement obligation at the estimated

date of retirement in 2013 is $1.5 million.

Discounting at an 8.5 percent credit-adjusted risk-free rate, the present value of the asset retirement obligation for the entire operation is $663,428 at January 1, 2003. The discounted amount in 1993 when the field started production is $293,425. That is the amount that would have been capitalized as part of the oil field cost. The amount of that cost that would have been expensed to date using a units-of-production method is computed as follows:

$$(\text{Cumulative production} \div \text{estimated total production}) \times \$293{,}425 =$$
$$[300 \div (300 + 250)] \times \$293{,}425 = \underline{\$160{,}050}$$

The reduction in the liability to be recognized upon transition is ($750,000 – $663,428) $86,572.

Journal Entry Required at Transition (1/1/03)

Liability (Statement 19)	750,000	
Long-lived asset (Statement 143)	293,425	
Cumulative effect adjustment		219,947
Accumulated depreciation (Statement 143)		160,050
Liability for ARO (Statement 143)		663,428

Appendix E: ILLUSTRATIVE EXAMPLE—SUBSEQUENT MEASUREMENT OF A LIABILITY OBTAINED FROM A MARKET PRICE

E1. Subsequent to initial measurement, an entity is required to recognize period-to-period changes in an ARO liability resulting from (a) the passage of time (accretion expense) and (b) revisions in cash flow estimates. To apply the subsequent measurement provisions of this Statement, an entity must identify undiscounted cash flows related to an ARO liability irrespective of how the liability was initially measured. Therefore, if an entity obtains the initial fair value from a market price, it must impute undiscounted cash flows from that price.

E2. This appendix includes an example that illustrates the subsequent measurement of a liability in situations where the initial liability is based on a market price. The example assumes that the liability is initially recognized at the end of period 0 when the market price is $300,000 and the entity's credit-adjusted risk-free rate is 8 percent. As required by this Statement, revisions in the timing or the amount of estimated cash flows are assumed to occur at the end of the period after accretion on the beginning balance of the liability is calculated. At the end of each period, the following procedure is used to impute cash flows from the end of period market

price, compute the change in that price attributable to revisions in estimated cash flows, and calculate accretion expense.

a. The market price and the credit-adjusted risk-free interest rate are used to impute the undiscounted cash flows embedded in the market price.
b. The undiscounted cash flows from (a) are discounted at the initial credit-adjusted risk-free rate of 8 percent to arrive at the ending balance of the ARO liability per the provisions of this Statement.
c. The beginning balance of the ARO liability is multiplied by the initial credit-adjusted risk-free rate of 8 percent to arrive at the amount of accretion expense per the provisions of this Statement.
d. The difference between the undiscounted cash flows at the beginning of the period and the undiscounted cash flows at the end of the period represents the revision in cash flow estimates that occurred during the period. If that change is an upward revision to the undiscounted estimated cash flows, it is discounted at the current credit-adjusted risk-free rate. If that change is a downward revision, it is discounted at the historical weighted-average rate because it is not practicable to separately identify the period to which the downward revision relates.

Subsequent Measurement of an ARO Liability Obtained from a Market Price

	End of Period			
	0	**1**	**2**	**3**
Market assumptions:				
Market price (includes market risk premium)	$300,000	$400,000	$350,000	$380,000
Current risk-free rate adjusted for entity's credit standing	8.00%	7.00%	7.50%	7.50%
Time period remaining	3	2	1	0
Imputed undiscounted cash flows (market price discounted at market rate)	$377,914	$457,960	$376,250	$380,000
Change in undiscounted cash flows	377,914	80,046	(81,710)	3,750
Discount rate:				
Current credit-adjusted risk-free rate (for upward revisions)	8.00%	7.00%		
Historical weighted-average credit-adjusted risk-free rate (for downward revisions)			7.83%	
Change in undiscounted cash flows discounted at credit-adjusted risk-free rate (current rate for upward revisions and historical rate for downward revisions)	$300,000	$69,916	$(75,777)	$3,750

Measurement of Liability under Provisions of ARO Statement

Period	Beginning Balance	Accretion (8.0%)	Change in Cash Flows	Ending Balance
0			$300,000	$300,000
1	$300,000	$24,000		324,000
2	324,000	25,920		349,920
3	349,920	27,994		377,914

Period	Beginning Balance	Accretion (7.0%)	Change in Cash Flows	Ending Balance
0				
1			$69,916	$69,916
2	$69,916	$4,894		74,810
3	74,810	5,236		80,046

Period	Beginning Balance	Accretion (7.83%)	Change in Cash Flows	Ending Balance
0				
1				
2			$(75,777)	$(75,777)
3	$(75,777)	$(5,933)		(81,710)

Period	Beginning Balance	Accretion	Change in Cash Flows	Ending Balance
0				
1				
2				
3			$3,750	$3,750

	Total			
Period	Beginning Balance	Accretion Expense	Change in Cash Flows	Ending Balance
0			$300,000	$300,000

1	$300,000	$24,000	69,916	393,916
2	393,916	30,814	(75,777)	348,953
3	348,953	27,297	3,750	380,000

Appendix F: EXCERPTS FROM CONCEPTS STATEMENT 7

[Best understood in context of full Concepts Statement]

F1. Paragraph 6 of this Statement states that FASB Statement No. 5, *Accounting for Contingencies*, and FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements,* "deal with uncertainty in different ways. Statement 5 deals with uncertainty about whether a loss has been incurred by setting forth criteria to determine when to *recognize* a loss contingency. Concepts Statement 7 addresses measurement of liabilities and provides a *measurement* technique to deal with uncertainties about the amount and timing of the future cash flows necessary to settle the liability." Paragraphs 55–61 of Concepts Statement 7 discuss the relationship between the fair value measurement objective and expected cash flow approach articulated in Concepts Statement 7 and accounting for contingencies under Statement 5. Those paragraphs of Concepts Statement 7 follow:

Relationship to Accounting Contingencies

> 55. Some have questioned whether the fair value objective and expected cash flow approach described in this Statement conflict with FASB Statement No. 5, *Accounting for Contingencies,* and FASB Interpretation No. 14, *Reasonable* Estimation of the Amount of a Loss. Statement 5 is primarily directed toward determining whether loss contingencies should be recognized and devotes little attention to measurement beyond the requirement that the amount of a loss can be reasonably estimated. This Statement focuses on the choice of a measurement attribute (fair value) and the application of a measurement technique (present value) rather than the decision to recognize a loss. The decision to recognize an asset or liability (or a change in an existing asset or liability) is different from the decision about a relevant measurement attribute. However, there are unavoidable interactions between accounting recognition and measurement, as discussed in paragraphs 56–61.
>
> 56. When using estimated cash flow information, fair value measurements may appear to incorporate elements that could not be recognized under the provisions of Statement 5. For example, the fair value of a loan necessarily incorporates expectations about potential default, whereas under Statement 5, a loss cannot be recognized until it is probable that a loss event has occurred. Expectations about

potential default are usually embodied in the interest rate, but they can also be expressed as adjustments to the expected cash flows (refer to Appendix A). Similarly, the amount that a third party would charge to assume an uncertain liability necessarily incorporates expectations about future events that are not probable, as that term is used in Statement 5. However, the use of *probable* in the first recognition criterion of Statement 5 refers to the likelihood that an asset has been impaired or a liability incurred. The term does not reference the individual cash flows or factors that would be considered in estimating the fair value of the asset or liability.

57. The potential for interaction between recognition (Is an asset impaired or does a liability exist?) and measurement (How much is the loss or the liability?) is inescapable. For example, a slight change in the assumptions from paragraphs 52 and 53—replacing a 90 percent probability of $10 with a 90 percent probability of $0—would lead some to a conclusion under Statement 5 that no liability should be recognized. The probable amount of loss described in Statement 5 is $0, but the expected cash flow is $100. [12] On the other hand, if the entity has 10 potential liabilities with those characteristics, and the outcomes are independent of one another, some would conclude that the entity has a probable loss of $1,000. They might argue that 1 of the 10 potential liabilities will probably materialize and that recognizing a loss is consistent with Statement 5. Recognition issues like these are among the most intractable in accounting and are beyond the scope of this Statement.

58. The second recognition criterion in Statement 5 focuses on the ability to estimate the *amount of loss.* When describing liabilities, the *amount of loss* often has been used to describe an estimate of the most likely outcome and the accumulation of cash flows associated with that outcome. However, the estimated costs of ultimately settling a liability are not the same as the fair value of the liability itself; those costs are only one element in determining the fair value of that liability. As described in paragraph 23, measuring the fair value of an asset or liability entails the estimate of future cash flows, an assessment of their possible variability, the time value of money, and the price that marketplace participants demand for bearing the uncertainty inherent in those cash flows.

59. Once the recognition decision is reached, the amount of loss is sometimes reported through an adjustment to the existing amortization or reporting convention rather than through a fresh-start measurement. For example, FASB Statement No. 114, *Accounting by Creditors for Impairment of a Loan,* determines the amount of loss using a revised estimate of cash flows (which can be determined using an expected-cash-flow approach) and the historical effective interest rate—an adjustment within the amortization convention. (A fresh-start measurement would use the revised estimate of cash flows and a current interest rate.) Amortization and depreciation conventions other than the interest method

are beyond the scope of this Statement. Adjustments to the interest method of allocation are discussed in paragraphs 89–100.

60. Other losses are reported through a fresh-start measurement of the asset. In those cases, the measurement principles are consistent with those described in this Statement. As mentioned earlier, Statement 121 is an example of a situation in which fair value is used in a fresh-start measurement to measure the amount of loss.

61. Although Statement 5 does not provide explicit measurement guidance for recognized loss contingencies, Interpretation 14 provides some measurement guidance. Interpretation 14 applies to the situation in which "no amount within the range [of loss] is a better estimate than any other amount" (paragraph 3). In those limited circumstances, the Interpretation prescribes a measurement equal to the minimum value in the range. It was developed to address measurement of losses in situations in which a single most-likely amount is not available. The measurement concepts described in this Statement focus on expected cash flows as a tool for measuring fair value and, as outlined earlier, the minimum amount in a range is not consistent with an estimate of fair value.

F2. Paragraph 8 of this Statement states that "a present value technique is often the best available technique with which to estimate the fair value of a liability" (footnote reference omitted). Paragraphs 39–54 and 75–88 of Concepts Statement 7 discuss the use of present value techniques in measuring the fair value of an asset or a liability. Those paragraphs of Concepts Statement 7 follow:

The Components of a Present Value Measurement

39. Paragraph 23 describes the following elements that together capture the economic differences between various assets and liabilities: [7]

a. An estimate of the future cash flow, or in more complex cases, series of future cash flows at different times
b. Expectations about possible variations in the amount or timing of those cash flows
c. The time value of money, represented by the risk-free rate of interest
d. The price for bearing the uncertainty inherent in the asset or liability
e. Other, sometimes unidentifiable, factors including illiquidity and market imperfections.

40. This Statement contrasts two approaches to computing present value, either of which may be used to estimate the fair value of an asset or a liability, depending on the circumstances. In the expected cash flow approach discussed in this Statement, only the third factor listed in paragraph 39 (the time value of

money, represented by the risk-free rate of interest) is included in the discount rate; the other factors cause adjustments in arriving at risk-adjusted expected cash flows. In a traditional approach to present value, adjustments for factors (b)–(e) described in paragraph 39 are embedded in the discount rate.

General Principles

41. The techniques used to estimate future cash flows and interest rates will vary from one situation to another depending on the circumstances surrounding the asset or liability in question. However, certain general principles govern any application of present value techniques in measuring assets or liabilities:

a. To the extent possible, estimated cash flows and interest rates should reflect assumptions about the future events and uncertainties that would be considered in deciding whether to acquire an asset or group of assets in an arm's-length transaction for cash.
b. Interest rates used to discount cash flows should reflect assumptions that are consistent with those inherent in the estimated cash flows. Otherwise, the effect of some assumptions will be double counted or ignored. For example, an interest rate of 12 percent might be applied to contractual cash flows of a loan. That rate reflects expectations about future defaults from loans with particular characteristics. That same 12 percent rate should not be used to discount expected cash flows because those cash flows already reflect assumptions about future defaults.
c. Estimated cash flows and interest rates should be free from both bias and factors unrelated to the asset, liability, or group of assets or liabilities in question. For example, deliberately understating estimated net cash flows to enhance the apparent future profitability of an asset introduces a bias into the measurement.
d. Estimated cash flows or interest rates should reflect the range of possible outcomes rather than a single most-likely, minimum, or maximum possible amount.

Traditional and Expected Cash Flow Approaches to Present Value

42. A present value measurement begins with a set of future cash flows, but existing accounting standards employ a variety of different approaches in specifying cash flow sets. Some applications of present value use contractual cash flows. When contractual cash flows are not available, some applications use an estimate of the single most-likely amount or **best estimate**.

43. Accounting applications of present value have traditionally used a single set of estimated cash flows and a single interest rate, often described as "the rate

commensurate with the risk." In effect, although not always by conscious design, the traditional approach assumes that a single interest rate convention can reflect all the expectations about the future cash flows and the appropriate risk premium. The Board expects that accountants will continue to use the traditional approach for some measurements. In some circumstances, a traditional approach is relatively easy to apply. For assets and liabilities with contractual cash flows, it is consistent with the manner in which marketplace participants describe assets and liabilities, as in "a 12 percent bond."

44. The traditional approach is useful for many measurements, especially those in which comparable assets and liabilities can be observed in the marketplace. However, the Board found that the traditional approach does not provide the tools needed to address some complex measurement problems, including the measurement of nonfinancial assets and liabilities for which no market for the item or a comparable item exists. The traditional approach places most of the emphasis on selection of an interest rate. A proper search for "the rate commensurate with the risk" requires analysis of at least two items—one asset or liability that exists in the marketplace and has an observed interest rate and the asset or liability being measured. The appropriate rate of interest for the cash flows being measured must be inferred from the observable rate of interest in some other asset or liability and, to draw that inference, the characteristics of the cash flows must be similar to those of the asset being measured. Consequently, the measurer must do the following:

a. Identify the set of cash flows that will be discounted.
b. Identify another asset or liability in the marketplace that appears to have similar cash flow characteristics.
c. Compare the cash flow sets from the two items to ensure that they are similar. (For example, are both sets contractual cash flows, or is one contractual and the other an estimated cash flow?)
d. Evaluate whether there is an element in one item that is not present in the other. (For example, is one less liquid than the other?)
e. Evaluate whether both sets of cash flows are likely to behave (vary) in a similar fashion under changing economic conditions.

45. The Board found the expected cash flow approach to be a more effective measurement tool than the traditional approach in many situations. In developing a measurement, the expected cash flow approach uses all expectations about possible cash flows instead of the single most-likely cash flow. For example, a cash flow might be $100, $200, or $300 with probabilities of 10 percent, 60 percent, and 30 percent, respectively. The expected cash flow is $220. [8] The expected cash flow approach thus differs from the traditional approach by focusing on direct analysis of the cash flows in question and on more explicit

statements of the assumptions used in the measurement.

46. The expected cash flow approach also allows use of present value techniques when the timing of cash flows is uncertain. For example, a cash flow of $1,000 may be received in 1 year, 2 years, or 3 years with probabilities of 10 percent, 60 percent, and 30 percent, respectively. The example below shows the computation of **expected present value** in that situation. Again, the expected present value of $892.36 differs from the traditional notion of a best estimate of $902.73 (the 60 percent probability) in this example. [9]

Present value of $1,000 in 1 year at 5%	$ 952.38	
Probability	10.00%	$ 95.24
Present value of $1,000 in 2 years at 5.25%	$ 902.73	
Probability	60.00%	541.64
Present value of $1,000 in 3 years at 5.50%	$ 851.61	
Probability	30.00%	255.48
Expected present value		$ 892.36

47. In the past, accounting standard setters have been reluctant to permit use of present value techniques beyond the narrow case of "contractual rights to receive money or contractual obligations to pay money on fixed or determinable dates." That phrase, which first appeared in accounting standards in paragraph 2 of Opinion 21, reflects the computational limitations of the traditional approach—a single set of cash flows that can be assigned to specific future dates. The Accounting Principles Board recognized that the amount of cash flows is almost always uncertain and incorporated that uncertainty in the interest rate. However, an interest rate in a traditional present value computation cannot reflect uncertainties in timing. A traditional present value computation, applied to the example above, would require a decision about which of the possible timings of cash flows to use and, accordingly, would not reflect the probabilities of other timings.

48. While many accountants do not routinely use the expected cash flow approach, expected cash flows are inherent in the techniques used in some accounting measurements, like pensions, other postretirement benefits, and some insurance obligations. They are currently allowed, but not required, when measuring the impairment of long-lived assets and estimating the fair value of financial instruments. The use of probabilities is an essential element of the

expected cash flow approach, and one that may trouble some accountants. They may question whether assigning probabilities to highly subjective estimates suggests greater precision than, in fact, exists. However, the proper application of the traditional approach (as described in paragraph 44) requires the same estimates and subjectivity without providing the computational transparency of the expected cash flow approach.

49. Many estimates developed in current practice already incorporate the elements of expected cash flows informally. In addition, accountants often face the need to measure an asset or liability using limited information about the probabilities of possible cash flows. For example, an accountant might be confronted with the following situations:

a. The estimated amount falls somewhere between $50 and $250, but no amount in the range is more likely than any other amount. Based on that limited information, the estimated expected cash flow is $150 [(50 + 250)/2].
b. The estimated amount falls somewhere between $50 and $250, and the most likely amount is $100. However, the probabilities attached to each amount are unknown. Based on that limited information, the estimated expected cash flow is $133.33 [(50 + 100 + 250)/3].
c. The estimated amount will be $50 (10 percent probability), $250 (30 percent probability), or $100 (60 percent probability). Based on that limited information, the estimated expected cash flow is $140 [(50 × .10) + (250 × .30) + (100 × .60)].

50. Those familiar with statistical analysis may recognize the cases above as simple descriptions of (a) *uniform,* (b) *triangular,* and (c) *discrete* distributions. [10] In each case, the estimated expected cash flow is likely to provide a better estimate of fair value than the minimum, most likely, or maximum amount taken alone.

51. Like any accounting measurement, the application of an expected cash flow approach is subject to a cost-benefit constraint. In some cases, an entity may have access to considerable data and may be able to develop many cash flow scenarios. In other cases, an entity may not be able to develop more than general statements about the variability of cash flows without incurring considerable cost. The accounting problem is to balance the cost of obtaining additional information against the additional reliability that information will bring to the measurement. The Board recognizes that judgments about relative costs and benefits vary from one situation to the next and involve financial statement preparers, their auditors, and the needs of financial statement users.

52. Some maintain that expected cash flow techniques are inappropriate for

measuring a single item or an item with a limited number of possible outcomes. They offer an example of an asset or liability with two possible outcomes: a 90 percent probability that the cash flow will be $10 and a 10 percent probability that the cash flow will be $1,000. They observe that the expected cash flow in that example is $109 [11] and criticize that result as not representing either of the amounts that may ultimately be paid.

53. Assertions like the one just outlined reflect underlying disagreement with the measurement objective. If the objective is accumulation of costs to be incurred, expected cash flows may not produce a representationally faithful estimate of the expected cost. However, this Statement adopts fair value as the measurement objective. The fair value of the asset or liability in this example is not likely to be $10, even though that is the most likely cash flow. Instead, one would expect the fair value to be closer to $109 than to either $10 or $1,000. While this example is a difficult measurement situation, a measurement of $10 does not incorporate the uncertainty of the cash flow in the measurement of the asset or liability. Instead, the uncertain cash flow is presented as if it were a certain cash flow. No rational marketplace participant would sell an asset (or assume a liability) with these characteristics for $10.

54. In recent years, financial institutions and others have developed and implemented a variety of pricing tools designed to estimate the fair value of assets and liabilities. It is not possible here to describe all of the many (often proprietary) pricing models currently in use. However, those tools often build on concepts similar to those outlined in this Statement as well as other developments in modern finance, including option pricing and similar models. For example, the well-known Black-Scholes option pricing model uses the elements of a fair value measurement described in paragraph 23 as appropriate in estimating the fair value of an option. To the extent that a pricing model includes each of the elements of fair value, its use is consistent with this Statement.

Present Value in the Measurement of Liabilities

75. The concepts outlined in this Statement apply to liabilities as well as to assets. However, the measurement of liabilities sometimes involves problems different from those encountered in the measurement of assets and may require different techniques in arriving at fair value. When using present value techniques to estimate the fair value of a liability, the objective is to estimate the value of the assets required currently to (a) settle the liability with the holder or (b) transfer the liability to an entity of comparable credit standing.

76. To estimate the fair value of an entity's notes or bonds payable, accountants attempt to estimate the price at which other entities are willing to hold the entity's

liabilities as assets. That process involves the same techniques and computational problems encountered in measuring assets. For example, the proceeds from a loan are the price that a lender paid to hold the borrower's promise of future cash flows as an asset. Similarly, the fair value of a bond payable is the price at which that security trades, as an asset, in the marketplace. As outlined in paragraphs 78–81, this estimate of fair value is consistent with the objective of liability measurement described in the preceding paragraph.

77. On the other hand, some liabilities are owed to a class of individuals who do not usually sell their rights as they might sell other assets. For example, entities often sell products with an accompanying warranty. Buyers of those products rarely have the ability or inclination to sell the warranty separately from the covered asset, but they own a warranty asset nonetheless. Some of an entity's liabilities, like an obligation for environmental cleanup, are not the assets of identifiable individuals. However, such liabilities are sometimes settled through assumption by a third party. In estimating the fair value of such liabilities accountants attempt to estimate the price that the entity would have to pay a third party to assume the liability.

Credit Standing and Liability Measurement

78. The most relevant measure of a liability always reflects the credit standing of the entity obligated to pay. Those who hold the entity's obligations as assets incorporate the entity's credit standing in determining the prices they are willing to pay. When an entity incurs a liability in exchange for cash, the role of its credit standing is easy to observe. An entity with a strong credit standing will receive more cash, relative to a fixed promise to pay, than an entity with a weak credit standing. For example, if 2 entities both promise to pay $500 in 5 years, the entity with a strong credit standing may receive about $374 in exchange for its promise (a 6 percent interest rate). The entity with a weak credit standing may receive about $284 in exchange for its promise (a 12 percent interest rate). Each entity initially records its respective liability at fair value, which is the amount of proceeds received—an amount that incorporates that entity's credit standing.

79. The effect of an entity's credit standing on the fair value of particular liabilities depends on the ability of the entity to pay and on liability provisions that protect holders. Liabilities that are guaranteed by governmental bodies (for example, many bank deposit liabilities in the United States) may pose little risk of default to the holder. Other liabilities may include sinking-fund requirements or significant collateral. All of those aspects must be considered in estimating the extent to which the entity's credit standing affects the fair value of its liabilities.

80. The role of the entity's credit standing in a settlement transaction is less

direct but equally important. A settlement transaction involves three parties—the entity, the parties to whom it is obligated, and a third party. The price of the transaction will reflect the competing interests of each party. For example, suppose Entity A has an obligation to pay $500 to Entity B 3 years hence. Entity A has a poor credit rating and therefore borrows at a 12 percent interest rate.

a. In a settlement transaction, Entity B would never consent to replace Entity A with an entity of lower credit standing. All other things being equal, Entity B might consent to replace Entity A with a borrower of similar credit standing and would probably consent to replace Entity A with a more creditworthy entity.
b. Entity C has a good credit rating and therefore borrows at a 6 percent interest rate. It might willingly assume Entity A's obligation for $420 (the present value at 6 percent). Entity C has no incentive to assume the obligation for less (a higher interest rate) if it can borrow at 6 percent because it can receive $420 for an identical promise to pay $500.
c. However, if Entity A were to borrow the money to pay Entity C, it would have to promise $590 ($420 due in 3 years with accumulated interest at 12 percent).

81. Based on the admittedly simple case outlined above, the fair value of Entity A's liability should be approximately $356 (the present value of $500 in 3 years at 12 percent). The $420 price demanded by Entity C includes the fair value of Entity A's liability ($356) plus the price of an upgrade in the credit quality of the liability. There may be situations in which an entity might pay an additional amount to induce others to enter into a settlement transaction. Those cases are analogous to the purchase of a credit guarantee and, like the purchase of a guarantee, the additional amount represents a separate transaction rather than an element in the fair value of the entity's original liability.

82. The effect of an entity's credit standing on the measurement of its liabilities is usually captured in an adjustment to the interest rate, as illustrated above. This is similar to the traditional approach to incorporating risk and uncertainty in the measurement of assets and is well suited to liabilities with contractual cash flows. An expected cash flow approach may be more effective when measuring the effect of credit standing on other liabilities. For example, a liability may present the entity with a range of possible outflows, ranging from very low to very high amounts. There may be little chance of default if the amount is low, but a high chance of default if the amount is high. In situations like this, the effect of credit standing may be more effectively incorporated in the computation of expected cash flows.

83. The role of an entity's credit standing in the accounting measurement of its

liabilities has been a controversial question among accountants. The entity's credit standing clearly affects the interest rate at which it borrows in the marketplace. The initial proceeds of a loan, therefore, always reflect the entity's credit standing at that time. Similarly, the price at which others buy and sell the entity's loan includes their assessment of the entity's ability to repay. The example in paragraph 80 demonstrates how the entity's credit standing would affect the price it would be required to pay to have another entity assume its liability. However, some have questioned whether an entity's financial statements should reflect the effect of its credit standing (or changes in credit standing).

84. Some suggest that the measurement objective for liabilities is fundamentally different from the measurement objective for assets. In their view, financial statement users are better served by liability measurements that focus on the entity's obligation. They suggest a measurement approach in which financial statements would portray the present value of an obligation such that two entities with the same obligation but different credit standing would report the same carrying amount. Some existing accounting pronouncements take this approach, most notably FASB Statements No. 87, *Employers' Accounting for Pensions,* and No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions.*

85. However, there is no convincing rationale for why the initial measurement of some liabilities would necessarily include the effect of credit standing (as in a loan for cash) while others might not (as in a warranty liability or similar item). Similarly, there is no rationale for why, in initial or fresh-start measurement, the recorded amount of a liability should reflect something other than the price that would exist in the marketplace. Consistent with its conclusions on fair value (refer to paragraph 30), the Board found no rationale for taking a different view in subsequent fresh-start measurements of an existing asset or liability than would pertain to measurements at initial recognition.

86. Some argue that changes in an entity's credit standing are not relevant to users of financial statements. In their view, a fresh-start measurement that reflects changes in credit standing produces accounting results that are confusing. If the measurement includes changes in credit standing, and an entity's credit standing declines, the fresh-start measurement of its liabilities declines. That decline in liabilities is accompanied by an increase in owners' equity, a result that they find counterintuitive. How, they ask, can a bad thing (declining credit standing) produce a good thing (increased owners' equity)?

87. Like all measurements at fair value, fresh-start measurement of liabilities can produce unfamiliar results when compared with reporting the liabilities on an

amortized basis. A change in credit standing represents a change in the relative positions of the two classes of claimants (shareholders and creditors) to an entity's assets. If the credit standing diminishes, the fair value of creditors' claims diminishes. The amount of shareholders' residual claim to the entity's assets may appear to increase, but that increase probably is offset by losses that may have occasioned the decline in credit standing. Because shareholders usually cannot be called on to pay a corporation's liabilities, the amount of their residual claims approaches, and is limited by, zero. Thus, a change in the position of borrowers necessarily alters the position of shareholders, and vice versa.

88. The failure to include changes in credit standing in the measurement of a liability ignores economic differences between liabilities. Consider the case of an entity that has two classes of borrowing. Class One was transacted when the entity had a strong credit standing and a correspondingly low interest rate. Class Two is new and was transacted under the entity's current lower credit standing. Both classes trade in the marketplace based on the entity's current credit standing. If the two liabilities are subject to fresh-start measurement, failing to include changes in the entity's credit standing makes the classes of borrowings seem different—even though the marketplace evaluates the quality of their respective cash flows as similar to one another.

F3. Paragraph 8 of this Statement requires that estimates of future cash flows used in a present value technique be consistent with the objective of measuring fair value. Paragraph 23 of Concepts Statement 7 discusses the essential elements of a fair value measurement. That paragraph of Concepts Statement 7 follows:

23. A present value measurement that fully captures the economic differences between the five assets described in paragraph 20 would necessarily include the following elements:

a. An estimate of the future cash flow, or in more complex cases, series of future cash flows at different times [2]
b. Expectations about possible variations in the amount or timing of those cash flows
c. The time value of money, represented by the risk-free rate of interest
d. The price for bearing the uncertainty inherent in the asset or liability
e. Other, sometimes unidentifiable, factors including illiquidity and market imperfections.

F4. Paragraph 9 of this Statement requires that estimates of future cash flows used in a present value technique incorporate assumptions that marketplace participants would use in their estimates of fair value whenever that information is available without undue cost and effort. Paragraph 32 of Concepts Statement 7 provides examples of circumstances in which an entity's

cash flows (entity assumptions) might differ from the market cash flows (marketplace assumptions). That paragraph of Concepts Statement 7 follows:

> 32. An entity's best estimate of the present value of cash flows will not necessarily equal the fair value of those uncertain cash flows. There are several reasons why an entity might expect to realize or pay cash flows that differ from those expected by others in the marketplace. Those include:
>
> a. The entity's managers might intend different use or settlement than that anticipated by others. For example, they might intend to operate a property as a bowling alley, even though others in the marketplace consider its highest and best use to be a parking lot.
> b. The entity's managers may prefer to accept risk of a liability (like a product warranty) and manage it internally, rather than transferring that liability to another entity.
> c. The entity might hold special preferences, like tax or zoning variances, not available to others.
> d. The entity might hold information, trade secrets, or processes that allow it to realize (or avoid paying) cash flows that differ from others' expectations.
> e. The entity might be able to realize or pay amounts through use of internal resources. For example, an entity that manufactures materials used in particular processes acquires those materials at cost, rather than the market price charged to others. An entity that chooses to satisfy a liability with internal resources may avoid the markup or anticipated profit charged by outside contractors.

Footnotes

FAS143 Footnote 1—The term *asset retirement obligation* refers to an obligation associated with the retirement of a tangible long-lived asset. The term *asset retirement cost* refers to the amount capitalized that increases the carrying amount of the long-lived asset when a liability for an asset retirement obligation is recognized.

FAS143 Footnote 2—In this Statement, the term *retirement* is defined as the other-than-temporary removal of a long-lived asset from service. That term encompasses sale, abandonment, recycling, or disposal in some other manner. However, it does not encompass the temporary idling of a long-lived asset.

FAS143 Footnote 3—*Black's Law Dictionary,* seventh edition, defines *promissory estoppel* as, "The principle that a promise made without consideration may nonetheless be enforced to prevent injustice if the promisor should have reasonably expected the promisee to rely on the promise and if the promisee did actually rely on the promise to his or her detriment."

FAS143 Footnote 4—If a tangible long-lived asset with an existing asset retirement obligation is acquired, a liability for that obligation shall be recognized at the asset's acquisition date as if that obligation were incurred on that date.

FAS143 Footnote 5—Appendix F incorporates those paragraphs.

FAS143 Footnote 6—Appendix F incorporates paragraphs 39–54 and 75–88 of Concepts Statement 7 that discuss present value techniques.

FAS143 Footnote 7—Appendix F incorporates paragraph 23 of Concepts Statement 7 that discusses the essential elements of a fair value measurement.

FAS143 Footnote 8—Paragraph 32 of Concepts Statement 7 (included in Appendix F) provides reasons why an entity's assumptions may differ from those expected by others in the marketplace.

FAS143 Footnote 9—Capitalized asset retirement costs do not qualify as *expenditures* for purposes of paragraph 16 of FASB Statement No. 34, *Capitalization of Interest Cost*.

FAS143 Footnote 10—For example, assume an entity acquires a long-lived asset with an estimated life of 10 years. As that asset is operated, the entity incurs one-tenth of the liability for an asset retirement obligation each year. Application of a systematic and rational allocation method would not preclude that entity from capitalizing and then expensing one-tenth of the asset retirement costs each year.

FAS143 Footnote 11—The Board is reconsidering the provisions of Statement 121 and has

issued an Exposure Draft, *Accounting for the Impairment or Disposal of Long-Lived Assets and for Obligations Associated with Disposal Activities.*

FAS143 Footnote 12—The subsequent measurement provisions require an entity to identify undiscounted estimated cash flows associated with the initial measurement of a liability. Therefore, an entity that obtains an initial measurement of fair value from a market price or from a technique other than the expected cash flow approach described in Concepts Statement 7 must determine the undiscounted cash flows and estimated timing of those cash flows that are embodied in that fair value amount for purposes of applying the subsequent measurement provisions. Appendix E includes an example of the subsequent measurement of a liability that is initially obtained from a market price.

FAS143 Footnote 13—An entity may use any descriptor for accretion expense so long as it conveys the underlying nature of the expense.

FAS143 Footnote 14—Paragraph 1 of Statement 13 provides that Statement 13 does not apply to lease agreements concerning the rights to explore for or to exploit natural resources such as oil, gas, minerals, and timber.

FAS143 Footnote 15—Opinion 20 requires an entity to disclose the effect of adopting a new accounting principle on income before extraordinary items and on net income (and on the related per-share amounts) of the period of the change. In addition, it requires an entity to compute on a pro forma basis and disclose on the face of the income statements for all periods presented income before extraordinary items and net income (and the related per-share amounts) as if the newly adopted accounting principle had been applied during all periods affected.

FAS143 Footnote 16—For example, the recorded cost of an asset leased by a lessor may be affected by the requirements of this Statement and would potentially affect the application of the classification criterion in paragraph 7(d) of Statement 13.

FAS143 Footnote 17—In this context, a third party is meant to encompass participants (or hypothetical participants) that provide settlement of asset retirement obligations in a market.

FAS143 Footnote 18—In determining the adjustment for the effect of its credit standing, an entity should consider the effects of all terms, collateral, and existing guarantees that would affect the amount required to settle the liability.

FAS143, Footnote 19—In the United States, the risk-free rate is the rate for zero-coupon U.S. Treasury instruments.

FAS143 Footnote 20—In general, that model required (a) recognition of the amount of a decommissioning obligation as a liability when incurred, (b) measurement of that liability based on discounted future cash flows using a cost accumulation approach, and (c) capitalization of the

decommissioning costs (the offsetting debit) by increasing the cost of the nuclear facility.

FAS143 Footnote 21—Although the nature of *closure or removal obligations* is similar to the nature of *asset retirement obligations,* the former is used to refer to the obligations that were within the scope of the initial Exposure Draft, and the latter is used to refer to the obligations that are within the broader scope of this Statement.

FAS143 Footnote 22—Examples of interim property retirements and replacements for component parts of larger systems are components of transmission and distribution systems (utility poles), railroad ties, a single oil well that is part of a larger oil field, and aircraft engines. The assets in those examples may or may not have associated retirement obligations.

FAS143 Footnote 23—For example, an entity that has recently commenced operations in a particular industry may find itself bound to perform by practice that is predominant in that industry. Absent evidence to the contrary, others are justified in relying on the entity to follow that practice.

FAS143 Footnote 24—Recognition at fair value of an obligation for which the likelihood of future settlement is less than probable is consistent with the criteria described in FASB Concepts Statement No. 5, *Recognition and Measurement in Financial Statements of Business Enterprises.*

FAS143 Footnote 25—A cost-accumulation approach is a measurement that includes some of the costs an entity would incur to construct an asset or settle a liability.

FAS143 Footnote 26—FASB Statement No. 13, *Accounting for Leases,* excludes from its scope "lease agreements concerning the rights to explore for or to exploit natural resources such as oil, gas, minerals, and timber" (paragraph 1).

FAS143 Footnote 27—Because of changes in estimates of both total reserves and retirement costs during the life of the field, the amount of estimated costs to retire an asset that may have been previously recognized in accumulated depreciation may not be determinable using cumulative production data. However, in the absence of more complete information, a shortcut approach that bases an estimate of that amount on cumulative production to date, current reserve estimates, or similar data and the current estimate of the asset retirement obligation is appropriate.

CON7 Footnote 12—($0 × .9) + ($1,000 × .1) = $100. For purposes of illustration, this example ignores the time value of money.

CON7 Footnote 7—The effect of the entity's credit standing on the measurement of its liabilities is discussed in paragraphs 75–88.

CON7 Footnote 8—($100 × .1) + ($200 × .6) + ($300 × .3) = $220. The traditional notion of a

best estimate or most-likely amount in this example is $200.

CON7 Footnote 9—Interest rates usually vary with the length of time until settlement, a phenomenon described as the yield curve.

CON Footnote 10—The uniform and triangular distributions are continuous distributions. For further information about these and other distributions, refer to:

- M. Evans, N. Hastings, and B. Peacock, Statistical Distributions, 2d ed. (New York: John Wiley & Sons, Inc., 1993).
- N. Johnson, S. Kotz, and N. Balakrishnan, Continuous Univariate Distributions, 2d ed., vol. 2. (New York: John Wiley & Sons, Inc., 1995).

CON7 Footnote 11—($10 × .9) + ($1,000 × .1) = $109. For purposes of illustration, this example ignores the time value of money.

CON7 Footnote 2—In complex measurements, such as measurements of liabilities settled by providing services, cash flow estimates necessarily include elements like overhead and profit margins inherent in the price of goods and services.