

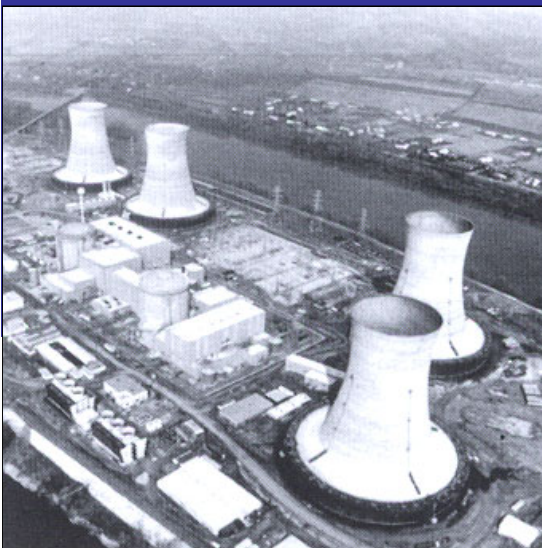


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Statement of Financial Accounting Standards No. 143, Accounting for Asset Retirement Obligations

Asset Retirement Obligations Implementation Issues



October 2002

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Table of Contents

Overview	3
Scope	3
Measurement	11
Calculation Process Overview	14
SFAS No. 143 – Journal Entry Accounting	22
Unregulated Operations	22
Regulated Operations	27
Financial Statement Disclosure	32
Record Keeping Issues for SFAS No. 143	34
Appendix A – Multiple Year Cash Flows	
Appendix B – Unregulated and Regulated Operations ARO Journal Entry Assumptions	

Statement of Financial Accounting Standards No. 143

Accounting For Asset Retirement Obligations

Overview¹

In June 2001, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards (SFAS) No. 143, "Accounting for Asset Retirement Obligations" (ARO's). SFAS No. 143 changes the way companies recognize and measure legal retirement obligations that result from the acquisition, construction and normal operation of tangible long-lived assets. In general, companies will be required to recognize much sooner any legal liability associated with the future retirement of tangible long-lived assets.

SFAS No. 143 is effective for fiscal years beginning after June 15, 2002 (January 1, 2003 for calendar year companies). Asset retirement obligations must be recognized as a liability and measured at fair value. The cost associated with the recognition of the asset retirement obligation is capitalized as part of the related asset's book cost and is depreciated over the expected life of the asset.

The asset retirement obligation is initially recorded at fair value, so the increase in that liability causes accretion expense (similar to interest) to be recognized each period as an operating expense in the income statement.

SFAS No. 143 does not grandfather any current accounting for existing obligations. Companies will convert to the new standard and recognize the cumulative effect of initially applying the statement as a change in accounting principle. 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 SFAS No. 143 and the net amount that is recognized in the financial statements by applying the new Standard. Any asset retirement obligations that are currently reported as part of accumulated depreciation will be reversed as part of the cumulative effect adjustment.

Scope

The scope of SFAS No. 143 is set forth in paragraph 2 of the Statement: "This Statement applies to **legal obligations** associated with the retirement of a tangible

¹ The methods, processes, and procedures contained in this paper are intended to illustrate and provide examples for one or more analytical models by which certain Asset Retirement Obligations (ARO's) could be evaluated. This material is intended neither to exclude the validity of other models, nor to be an exhaustive and comprehensive presentation of all valid models. The models described in this paper may not be applicable to particular situations and are not necessarily recommended for the reader's specific application. It is the conclusion of the authors that each entity assessing ARO's should consult with its auditor, accountants, and legal counsel.

long-lived asset” (emphasis added). The obligations included within the scope of the standard are those associated with the retirement of a long-lived asset that result from the acquisition, construction, or the normal operation of a long-lived tangible asset. An ARO liability should be recognized if it meets the definition of a liability in FASB Concepts Statement No. 6, “Elements of Financial Statements.” In assessing whether an ARO meets this definition, an entity should determine if:

- a) It has a present duty or responsibility to one or more other entities that entails settlement by probable future transfer or use of assets,
- b) It has little or no discretion to avoid a future transfer of use of assets, and
- c) An obligating event has already happened.

What does this mean and how does a company determine if a long-lived asset is within this scope definition? Only assets that are defined as tangible and long-lived are included. There has been much discussion concerning what constitutes a tangible long-lived asset. While there is no clear definition given, examples of tangible long-lived assets include items such as generation plants, mines, gas mains and compressor stations, substations, transformers, buildings, capacitors, lines, poles, streetlights and fee property. Examples of assets that are not tangible long-lived assets include software, organization costs, and goodwill. A company must then determine if any legal obligations exist that are associated with the retirement of these long-lived assets. Retirement is defined as other-than-temporary removal of a long-lived asset from service. It includes sale, abandonment, recycling, or disposal in some other manner. However, it does not include the temporary idling of a long-lived asset.

Identifying ARO’s and measuring the liability is the most critical part in the adoption of SFAS No. 143. It is recommended that utilities form working teams and include representatives from legal, accounting, financial, operations and other business units as deemed necessary. These teams will need to define very specifically what the scope of SFAS No. 143 is for their company and how the review of what is within the scope will take place. This entire process should be well documented.

Basically the determination of whether assets are within the scope of SFAS No. 143 is a review of legal obligations past and present that relate to the purchase, construction, development, or normal operation of the asset. Utilities have substantial tangible long-lived assets, many of which were constructed over several decades. As a result, a significant amount of work may be required to identify the legal obligations associated with utility assets. Also an obligation may result from only a portion of an asset (e.g., disposal of PCBs from a transformer) and only that portion must be recognized under the Standard. For purposes of SFAS No. 143, a legally enforceable obligation can result from:

- a) A government action, such as law, statute, or ordinance,
- b) An agreement between entities, such as a written or oral contract,
- c) Conduct, which would obligate the promisor to perform under the doctrine of promissory estoppel.

To identify ARO's, the legal department may perform a review of codes, statues, regulations, ordinances and typical obligating documents including contracts, permits, certificates of need, etc. It is important to establish ground rules to prevent the review from becoming impossible in size. Start with a definition of tangible long-lived assets and a list of those assets that meet the definition. It is important to give this definition to the legal team and any area assisting on this project because the areas outside of accounting may not be cognizant of useful lives. For areas where there is a large magnitude of similar documents, use of a sampling technique may be employed. However, it should be noted that if the result of the sampling does not produce evidence of a legal obligation, one might want to include an ARO disclosure if there could be an obligation, albeit remote, in the contracts not sampled. An example of such a document is the easement associated with distribution property.

By assessing plant assets and reviewing documents including contracts, licenses, leases, etc., the team can develop potential ARO's. Although the chance of determining that a legal obligation has accrued under a doctrine of promissory estoppel is small, the team should consider potential areas where such liability might arise. The review of promissory estoppel is difficult, and varies state by state. The recommendation is to identify relationships or other documentation that employees know about or have in their possession. Companies may query their corporate communications archives, and staff, company counsel, and field personnel, where necessary, to identify conduct that may involve the doctrine of promissory estoppel. An inventory questionnaire may be used to assist with the field review. The discovery of a promise alone is not enough to create a retirement obligation through promissory estoppel. A determination must be made that a third party relied upon such a promise to its detriment and that a court is likely to order equitable relief.

Many utilities have included removal costs in depreciation rates or some other rate recovery mechanism. For ratemaking purposes, the collection of depreciation expense, including the salvage, and gross removal cost should remain intact. If customers have been paying for the cost of removal through rates, they may have a reasonable expectation that the utility will expend the costs to remove the asset at the end of its useful life. The inclusion of a cost of removal component in depreciation rates, in and of itself, does not constitute a legal obligation to remove or dispose of the asset under the doctrine of promissory estoppel. However, promises made by utilities in rate case proceedings or the specific orders issued by regulatory bodies in rate cases could be evaluated as a potential legal obligation. This determination is a legal question that should be evaluated with the assistance of legal counsel. Barring any legal obligations, the inclusion of removal costs in depreciation rates does not constitute an ARO.

Prior to adoption of SFAS No. 143, Generally Accepted Accounting Principles (GAAP) as applied by utilities included an accrual of many estimated removal costs over the life of the asset and to classify the accrued removal cost liability as a part of the provision for accumulated depreciation. If all or a portion of asset retirements are not included in the scope of SFAS No. 143, GAAP continues to allow the accrual of the removal cost liability over the life of the asset. GAAP generally does not address where regulatory assets or liabilities should be recorded. Accordingly, the removal cost liability related to

these types of assets that is recorded in accordance with rate recovery need not be reclassified as a regulatory liability. If an asset does fall under the scope of SFAS No. 143 and a company is subject to SFAS No. 71, "Accounting for the Effects of Certain Types of Regulation," any removal cost related to that asset currently classified as a part of the provision for accumulated depreciation should be removed and replaced with an ARO liability in accordance with SFAS No. 143. Additionally, for SFAS 71 companies, any cumulative effect adjustments and/or any ongoing differences between the application of removal costs in a regulated environment and SFAS 143 should be recorded as a regulatory liability or asset.

To summarize, the scope of the final statement includes only liabilities for legal obligations that compel the owner to remove or dispose of the asset or of some component at retirement. If the "company has a legal obligation to perform decontamination activities when the plant ceases operations" (A12), then there is an ARO related to that plant. A conceptual framework for the ARO includes:

- a) A legal requirement to remove an asset or component part must exist first before any ARO is recognized for removal costs. However, if there is no legal obligation to remove a component, then no ARO is required. For example, if an exhaust stack is retired in place at a production facility and there are no legal requirements to remove the stack, there is no ARO. Conversely, if there is a state requirement to remove any structure over 25 feet upon cessation of service, then there likely is an ARO.
- b) A legal obligation may exist to dispose of a component part of an asset: "Any legal obligations that require disposal of the replaced part are within the scope of this Statement" (A9). For example, there may not be a legal requirement to remove a component part, but the component part may wear out or be removed for other reasons. In this case, the removal cost of the asset would not constitute an ARO. However, there may be legal requirements to dispose of the component part once it has been removed. The legal requirement to dispose of the component would constitute an ARO (A15).
- c) All ARO liabilities must meet the liability criteria in FAS Concepts Statement Number 6, "Elements of Financial Statements." Only present (current) obligations meet these criteria.

The Standard identifies examples of potential ARO's including landfill closure and nuclear decommissioning, however, there are probably more in existence. The following are examples of types of assets that may be within the scope of SFAS No. 143 and circumstances that may or may not create an ARO:

1. Nuclear Production

- a) *Final Nuclear Decommissioning* – a company has a legal obligation to perform decontamination activities when the plant ceases operations. Contamination results from the normal operation of the plant and a liability should be recorded. A company needs to review

contracts, licenses, operating agreements, leases, etc. to assess their extent of liability. In addition to obligations surrounding contamination, there may be legal requirements to return the plant to a “greenfields” state. These costs are usually identified in required decommissioning studies. If the legal obligation is determined to include only the contaminated portions of the plant, then adjustments to the entire decommissioning study will need to be made to reflect only those portions as an ARO.

- b) *Nuclear Fuel Storage Facilities* – a company needs to review associated documents, which surround this asset. It is generally assumed that the federal government will bear the responsibility for spent nuclear fuel when it is finally removed from the plant site. The removal of the storage facilities for spent nuclear fuel (*i.e.*, Independent Spent Fuel Storage Installations) after the spent fuel has been removed will be the obligation of the company. This obligation would create an ARO and may be included already in final decommissioning. If no storage facilities currently exist but they will be required when the spent fuel pool reaches capacity, the removal obligation of such facilities would need to be considered when assessing an entity’s obligation when the obligating event has occurred.
- c) *Interim Retirements* - an asset retirement obligation may exist for component parts of the larger system. The retirement of this component part may happen prior to retirement of the entire system and may constitute an obligation separate from the final retirement or decommissioning. An example is a steam generator that needs replacement prior to the end of the life of the unit. An obligation associated with the disposal of a second steam generator will occur at the time of replacement of the generator (resulting in the irradiation of a second generator). The cash flow of the removal obligation to dispose of the second steam generator may be linked with the final decommissioning of the plant (*e.g.* if the replaced steam generator is left on site and factored into the decommissioning study) or can be reflected in a new ARO. Since it will probably be included in future plant decommissioning estimates, recording as a change in the existing ARO cash flow will simplify future accounting. Not all interim retirements will create an ARO. The recommendation is that a company will need to assess interim retirements individually as to frequency and materiality to determine when an ARO should be recognized and also what costs should be captured as an ARO.

An example of this follows: Entity A has a highly contaminated nuclear asset with a cost of removal of approximately \$2 million. \$0.8 million is for labor and supplies needed to remove the asset and \$1.2 million is for the “special” disposition costs for disposing of the contaminated asset. Because this is an interim retirement, the recommendation is that only the \$1.2 million of disposition costs be

accounted for in the ARO. For interim retirements such as these, it is generally assumed that there is no legal obligation to remove the asset, only a legal obligation to dispose of the asset. In contrast, when the plant is closed and the replaced asset is being removed, it is generally assumed that the entire \$2 million of costs be included in the ARO due to the legal obligations associated with closing the plant. In a similar example, suppose the labor and supplies to remove the asset are \$1.98 million and the disposition costs are only \$.02 million. In this example a company may choose not to record any ARO based on immateriality. Each company will need to address its own specific materiality thresholds.

2. Steam Production

- a) *General* – after reviewing legal documents, which include easements, licenses, leases, etc., a company may discover they have no legal obligations associated with asset retirement. Alternatively, a company may discover legal obligations associated with assets such as intake structures, ash ponds, underground storage tanks, coal piles, tanks used to accumulate hazardous waste, or coal mines. In some instances, there is no legal obligation to remove an asset or restore the land. In another instance, an existing law or a lease on the land may require decommissioning of the plant or components of the plant.
- b) *Environmental Obligations* – a company may have certain environmental obligations. If these environmental obligations result from environmental law, contract, or other agreement or license that require the remediation of an obligation at a specific point (e.g., a specific time after ceasing operations or at retirement), then they are legal obligations. An ARO results only from environmental remediation liabilities arising from the normal operation of the power plants. A company may have some liability associated with the retirement and removal of a segment of the power plant such as ash ponds or intake structures. Asbestos to be removed as part of an asset retirement is subject to the requirements of SFAS No. 143 and the cost of removal should be included in determining the obligation. If asbestos clean-up is performed prior to the asset retirement then it should be accounted for in accordance with the guidance of the American Institute of Certified Public Accountants (AICPA) Statement of Position (SOP) 96-1, “Environmental Remediation Liabilities.”
- c) *Shared Assets* – some generating facilities are co-owned or have many joint owners. Co-owners should cooperate to the extent possible regarding consistent treatment of SFAS 143. For example, a situation may arise here one party defines an ARO and the other owners do not. In this situation, it would be helpful for the company to review the circumstances behind why the one of the companies chose to recognize an ARO. There could be instances where one company has made commitments and the other company will need

to have their legal staffs decide whether or not this promise could be construed as their obligation, as well. However, legitimate differences may occur between joint owners. Differences in the amount of the estimated ARO may occur, but different judgments about whether an ARO exists should be rare.

3. Hydro Production

- a) *Federal Government* – many hydro dams are operated under governmental water rights or flowage rights licenses issued by the Federal Energy Regulatory Commission (FERC). These licenses may not have explicit terms stating that a company is responsible for removal or closure costs related to the ultimate retirement of the dams. These dams have an extremely long useful life if operated and maintained properly and it is often presumed that the asset will be operated into perpetuity. Since removal of the dam property is not required under current operations, there is no ARO arising from the FERC licenses. But that may not always be the case. If the plant will be decommissioned, an application to FERC would be made and if a FERC order is issued, and the utility starts the surrender application process, then an ARO would be created. Also, if a dam is structurally impaired and legally, it must be removed, an ARO is created.
- b) *State Government* – although the dams and spillways are controlled by Federal licenses, there may be additional requirements placed on the facility by the state or local agencies. A review of such requirements may produce an ARO even though the review of the Federal license did not.

4. Electric Transmission And Distribution

- a) *Transmission and Distribution Lines* – a company may have transmission or distribution lines that operate under property easement agreements. Most utilities hold perpetual easements. Whether or not the easement is perpetual, a company, in general, operates the transmission and distribution lines as if the assets will be operated in perpetuity. If a perpetual easement were to be released, a company may have a legal obligation to remove the lines, or in some instances, a state may require removal if the entire line is retired. A legal obligation may exist if the contract for the easement requires removal of the lines at a given point. In both instances, legal counsel should be consulted to determine whether a legal obligation exists. The issue of whether these types of obligation can be measured is dealt with in the next section.
- b) *Interim Retirements* - there are interim retirements of transmission and distribution (T&D) plant that are components of the system occurring annually that may have retirement obligations associated with them. These may be due to environmental or other contractual agreements. Examples of these would be wood poles and electrical equipment containing PCB's, such as transformers and capacitors. However, where a utility intends to remove PCB's and return the unit to service, the PCB removal might constitute maintenance cost rather than an ARO since it is not related to the retirement

of an asset. The disposal of treated wood poles may be regulated under state law and may require special handling and disposal. These retirements need to be addressed for frequency and materiality to determine when the interim retirement would fall within the scope of SFAS No. 143.

5. Gas Transmission and Distribution

- a) *Gas Transmission and Distribution Mains and Services* – a company may have a gas transmission or distribution system that operates under property easement agreements. The company would usually hold perpetual easements. If an easement were to be released, the company may not have an obligation to remove the system but would allow a retirement in place. In this case, no ARO is required. Gas pipelines containing PCBs must meet certain requirements prior to abandonment or when removed for disposal. These requirements may trigger an ARO. In some instances, a state may require removal if the entire line is retired. In this case the line would have an ARO. Generally, a company operates the gas transmission and distribution system as if the assets will be operated in perpetuity. A legal obligation may be construed to exist due to the easement requiring removal of the lines or, if material, a requirement to cut and cap the line at retirement. The issue of whether these types of obligation can be measured is dealt with in the next section.
- b) *Interim Retirements* - there are interim retirements of components of gas transmission and distribution assets occurring annually. Some of these may have retirement obligations due to environmental or other contractual reasons. Generally, replacing sections of pipe or other interim replacement of gas assets will not create an ARO as long as the replacement will satisfy any material legal removal requirements (e.g., cutting and capping pipe). Environmental-related disposal requirements, if any, should be addressed based on materiality and timing.

6. Other Long-Lived Assets

- a) *Underground tanks* could be considered as a retirement obligation. In some instances, state requirements create an obligation when the tanks are initially installed. In other cases, there are no legal obligations surrounding the disposal of the tanks until the entity does something with the land the tanks are on. (i.e., sells the property). In this latter case, a legal obligation would exist, but the ARO may not be reasonably determinable. There still may be no obligation if the clean-up is performed under SOP 96-1.
- b) *Coal mines* could possibly be considered an ARO with regard to potential closure and/or site reclamation requirements. If the assumption is made that the mines are the assets and they are reclaimed in 12-18 months, there may not be an ARO as the mines would not be considered long-lived assets. If the mines were open for longer periods and there are legal reclamation requirements, then the reclamation at these mines may constitute an ARO.

7. Lease Obligations

- a) SFAS No. 143 applies to companies that incur retirement obligations including companies that lease assets to others. There may be costs associated with a lease that should be recorded as an asset retirement obligation.
- b) An obligation to remove leasehold improvements at the end of the lease may be an ARO under the Standard if the landlord can contractually require the lessee to remove the leasehold improvements at the end of the lease. The timing of the recognition of the ARO is when the obligating event occurs (*i.e.*, when the improvements are made that may later be required to be removed).
- c) Obligations of a lessee 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" are not within the scope of SFAS No. 143.

8. Remediation Responsibilities

- a) SFAS No. 143 does not apply to obligations resulting from improper operation of an asset or a system. Environmental damage that requires immediate clean-up resulting from improper operations (*e.g.*, an oil spill) would probably be liable under SOP 96-1 and not subject to the Standard.
- b) If the clean-up is delayed and can be completed with the system retirement, it is determined as due to proper operations and is an obligation under SFAS No. 143.

Measurement

Once it is determined that an asset retirement obligation falls within the scope of SFAS No. 143 - the next step is measurement of the liability. The amount of the liability would initially be measured at fair value. 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 determined. 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. In subsequent periods, an entity would recognize any changes in the amount resulting from the passage of time and revisions to either the timing or amount of estimated cash flows.

The initial measurement of the liability will be at fair value (*i.e.* the amount that an entity would be required to pay in an active market to settle the asset retirement obligation). The guidelines require a fair value measurement even though some entities may perform the retirement activities using internal resources. If quoted market prices are not available, an estimate of fair value can be calculated using valuation techniques such as the expected present value method. SFAS No. 143 states "a present value technique 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 must be consistent with the objective of measuring fair value. FASB Concepts Statement No. 7, "Using Cash Flow Information and Present Value in Accounting Measurements," 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. The expected cash flow approach will usually be the only appropriate technique for an ARO. In estimating the probability of estimated cash flows, if the probability is evenly distributed around the estimate, no further probability assessment is required.

For periods subsequent to the initial measurement, entities are required to recognize changes in the liability resulting from the passage of time and from revisions in the timing or amount of estimated cash flows. Changes resulting from the passage of time will increase the carrying amount of the liability over time and will be recognized as an operating cost rather than as interest expense in the financial statements. Entities will use the effective interest method and the credit-adjusted risk-free rate for interest allocation to the liability. The objective of the method is to recognize a level effective interest rate that is equivalent to the entity's risk-free rate (rate of zero coupon US Treasury bonds) adjusted for the entity's credit standing. The credit-adjusted risk-free rate may be adjusted as a result of the amount of funding that has been provided to an external nuclear decommissioning trust based on its relationship to the related ARO.

Revisions in the timing or amount of estimated cash flows are to be recognized as changes in the carrying amount of the liability and the related capitalized asset and are to be measured using the current credit-adjusted risk-free rate for upward revisions, or using the credit-adjusted risk-free rate applied in the initial measurement for downward revisions. Such increments to retirement assets and liabilities will have to be tracked and accounted for separately. The tracking of layers would be similar to the multiple years cash flows demonstrated in Appendix A – "Multiple Year Cash Flows".

The statement requires a company to recognize the present value of its total estimated cash flows as a liability with a corresponding increase to the related long-lived asset. Use of cost-accumulation-based estimated engineering studies or removal cost studies might be discounted at the company's credit-adjusted risk-free interest rate to record the initial value of the liability, plus cumulative unrecognized interest accretion if the liability occurred in the past. The cumulative effect adjustment for unrecognized depreciation and accretion expense may be recoverable/refundable in rates and, therefore, a company may recognize an additional regulatory asset/liability rather than a cumulative adjustment to the income statement.

In developing expected retirement cash flows, most entities will use the expected present value method due to the non-existence of an active market for settling ARO's. Removal costs should be based on gross removal costs instead of net. The estimated salvage value is included in determining the depreciation base of the asset. Therefore, the estimated salvage should be excluded from the cash flows used to estimate the ARO. When an entity uses the expected present value method, the entity would need to

incorporate assumptions into its cash flows that would reflect the assumptions that third parties would be required to consider in order to take on the settlement of the obligation. Such third party or market assumptions include 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 normally include such as inflation, overhead, equipment charges, profit margin, and advances in technology,
- c) The extent that a third party's costs or timing would differ due to different future scenarios and relative probability,
- d) The market risk premium that a third party would demand for them to take on the risks (similar to a contingency factor).

An example would be two entities using nuclear decommissioning studies to determine an ARO for their nuclear power plants. In one case, Entity A intends to decommission their plant using internal resources. Entity B had planned to have their decommissioning performed by a third party. Both entities reflected their intentions in their decommissioning studies. In developing their ARO, Entity A would add assumptions about profit margins, overheads and other third party costs to their ARO estimate, similar to Entity B. Failure to include certain third party costs would be inconsistent with SFAS No. 143.

Some general guidelines for determining whether to recognize an ARO and corresponding examples are described below:

- a) When it has been established that a liability exists, a cash flow can be determined and there is a high or medium probability of the settlement date - as is the case for nuclear decommissioning costs - a liability must be recorded. Cash flows are estimated by cost-accumulation-based engineering studies and the settlement date is provided by the license date.
- b) When it has been established that a liability exists - a cash flow can be determined but there is a low probability of the settlement date - the measurement will reflect the low probability in the expected cash flows. An example would be the removal of an asset when the retirement is indefinite. Removal costs and a corresponding estimate of cash flows could be obtained. However, since retirement is indefinite, no reasonable estimate of the timing can be made. If a reasonable estimate can be made of the timing, that probability estimate should be used in the expected cash flow analysis to determine the ARO to be recorded.
- c) When it has been established that a liability exists - a cash flow cannot be determined and there is not a reasonable estimate of the settlement date - no liability is recorded but disclosure of the ARO is required. In subsequent periods, the ARO must be re-evaluated until sufficient information exists to determine a reasonable estimate of fair value. Generally, mass assets such

as transmission and distribution assets have indeterminate estimated cash flows and settlement dates.

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 why must be disclosed. For the year of adoption, pro forma disclosure is required for the amount of the liability for asset retirement obligations as if SFAS No. 143 had been applied for all periods affected.

Calculation Process Overview

This section is intended to provide some general guidelines for the calculation and measurement of ARO liabilities. The calculation of estimated cash flows and present values, accretion, and depreciation with corresponding amounts needed for journal entries will be illustrated. Examples for subsequent cash flow increases and decreases will also be shown. An example footnote disclosure for interim retirements for regulated companies is illustrated and the assumptions used for the multiple cash flows found in Appendix A are summarized. Some general guidelines for the calculation and measurement of ARO liabilities are as follows:

- a) Estimates must be based on current active market pricing or prices for similar valuation, not at a cost using internal labor resources.
- b) If removal will take longer than one year, estimated cash flows should be determined for each year.
- c) The accretion schedule and present value depreciation schedules should be prepared individually for each cash flow, rather than as a sum total.
- d) If variable removal options exist, probability analysis should be done to determine the appropriate cash flows. Also, if there is a potential license extension, inflation factors should be applied to cash flows for the time periods added.

- e) Re-evaluation of estimated cash flow: for increases in estimates, current risk-free rates should be used; for decreases, the risk free rate in effect when the original liability was calculated would be used.
- f) If more than one generating unit is at a facility, depending on timing, each unit may carry its own ARO. Additionally common-area removal costs are presumed to be included with the final unit being removed. This could result in a layering effect on the books.
- g) Exclude salvage value from cash flow estimates.
- h) New asset calculations would still apply except there would be no accumulated depreciation or accretion to date when placed in service.

1. Calculating Expected Cash Flows

Assumptions – for this example, the expected cash flows are based on the components of the cost of removal including labor, overheads, contractor’s mark-up, and market risk-premium. The overhead rate is 80% of labor, a profit margin based on contractor’s mark-up of 20%, and a market risk premium of 5%. The asset was placed in service on January 1, 1995 and has an estimated useful life of 20 years; the implementation date is January 1, 2003. Inflation from the time the asset was installed until the date of retirement is 4%. Removal expenditures will take place in the year 2014. The credit-adjusted risk-free rate of 6.5% is used to compute the expected present value. The cost of removal liability accrued to date for a non-regulated company or the cost embedded in accumulated depreciation for a regulated company is assumed to be \$500,000.

Labor	\$200,000
OH & Equipment: (80% x 200,000)	160,000
Contractor’s Mark-up: (20% x (200,000 + 160,000))	72,000

Expected Cash Flows Before Inflation	\$432,000

Inflation Rate	4%
Inflated Cash Flows: $432,000 \times (1 + 4\%)^{20}$	946,565
Market Risk Premium (5% x 946,565)	47,328

Total Expected Cash Flows	\$993,893
	=====

Inflated Cash Flows: $\text{Cash Flows} \times (1 + \text{rate})^{\# \text{years}}$

2. Calculate the Present Value of the Estimated Cash Flows

Using a credit-adjusted risk-free rate, the future expected cash flows are present valued to the point where the liability was incurred. In this example the asset life is assumed to be 20 years.

Expected Cash Flow	\$993,893
Credit-Adjusted Risk-Free Rate	6.5%
Present Value	282,064
	=====

Present Value (Cash Flow / (1 + rate) ^ #years)

3. Calculate Accretion Schedule using the same risk-free rate

The present value is accreted over the life of the asset at the specific rate so at the end of the term the total equals the future expected cash flows.

	Present Value	Annual Accretion	Liability Balance
1995	282,064	18,334	300,398
1996	300,398	19,526	319,924
1997	319,924	20,795	340,719
1998	340,719	22,147	362,866
1999	362,866	23,586	386,452
2000	386,452	25,119	411,572
2001	411,572	26,752	438,324
2002	438,324	28,491	466,815
2003	466,815	30,343	497,158
2004	497,158	32,315	529,473
2005	529,473	34,416	563,889
2006	563,889	36,653	600,541
2007	600,541	39,035	639,577
2008	639,577	41,572	681,149
2009	681,149	44,275	725,424
2010	725,424	47,153	772,576
2011	772,576	50,217	822,794
2012	822,794	53,482	876,275
2013	876,275	56,958	933,233
2014	933,233	60,660	993,893

Annual Accretion = Present Value x Credit-Adjusted Risk-Free Rate
 Liability Balance = Present Value + Annual Accretion

4. Calculate Depreciation Expense Schedule

Present Value of the asset retirement cost is depreciated over the life of the asset.

The total at end of the asset's life must equal the Present Value.

Year	Depreciation Expense
1995	14,103
1996	14,103
1997	14,103
1998	14,103
1999	14,103
2000	14,103
2001	14,103
2002	14,103
2003	14,103
2004	14,103
2005	14,103
2006	14,103
2007	14,103
2008	14,103
2009	14,103
2010	14,103
2011	14,103
2012	14,103
2013	14,103
2014	14,103
Total	282,064

Depreciation Expense = Present Value of **\$282,064** / 20 years (estimated useful life)

5. Create Expense Worksheet (combine above schedules)

Annual accretion and annual depreciation of the Present Value are added together to get the total new expenses. A total line can be inserted into the worksheet to accumulate totals to date for use in the journal entry at implementation.

	Annual Accretion Expense	Annual Depreciation Expense	Total Expenses
1995	18,334	14,103	32,437
1996	19,526	14,103	33,629
1997	20,795	14,103	34,898

	Annual Accretion Expense	Annual Depreciation Expense	Total Expenses
1998	22,147	14,103	36,250
1999	23,586	14,103	37,689
2000	25,119	14,103	39,223
2001	26,752	14,103	40,855
2002	28,491	14,103	42,594
Totals to Date	184,751	112,826	297,577
2003	30,343	14,103	44,446
2004	32,315	14,103	46,418
2005	34,416	14,103	48,519
2006	36,653	14,103	50,756
2007	39,035	14,103	53,138
2008	41,572	14,103	55,676
2009	44,275	14,103	58,378
2010	47,153	14,103	61,256
2011	50,217	14,103	64,321
2012	53,482	14,103	67,585
2013	56,958	14,103	71,061
2014	60,660	14,103	74,763
Total	711,831	282,062	993,893

Annual Accretion Expense + Annual Depreciation Expense = Total Expenses

6. Summary of Journal data

Sample journal entries are shown in Appendix B. Information needed for journal entry consideration is shown below:

Asset Retirement Liability (ARO) = PV element	<u>Amount</u> 282,064
Asset Retirement Liability (ARO) = Accretion to date element	184,751
Additional Accumulated depreciation = PV depreciated thru 2002	112,826
2003 Depreciation Expense = PV depreciation per schedule	14,103
2003 Accretion expense = per schedule	30,343

7. Subsequent Cash Flow Increases

Increases in cash flows must use the current risk free rate.

Original Cash Flow Estimate	993,893	Year 2002
Original Risk- Free Rate used	6.50%	Year 2002
Subsequent Revised Cash Flow	1,493,893	Year 2003
DELTA Increase in Cash Flow	500,000	Year 2003
Current Risk Free Rate	7.50%	Year 2003

New Layer of ARO

Incremental Increase	500,000
Present Value (500,000.00 / (1+7.5%) ¹²)	209,927

PV Calculation = incremental cash flow / (1+rate)^{# Remaining years}
 (1995 + 20 years = 2015, 2015 - CY 2003 = 12 yr. Remaining)

New Layer of Accretion/Depreciation

Accretion Expense

Accretion expense is calculated using the new credit-adjusted risk-free rate in effect at the time of the change in estimate (2003). The rate in effect in 2003 is 7.50%.

Year	Present Value	Annual Accretion Expense	Liability Balance
2003	209,927	15,745	225,672
2004	225,672	16,925	242,597
2005	242,597	18,195	260,792
2006	260,792	19,559	280,351
2007	280,351	21,026	301,377
2008	301,377	22,603	323,981
2009	323,981	24,299	348,279
2010	348,279	26,121	374,400
2011	374,400	28,080	402,480

Year	Present Value	Annual Accretion Expense	Liability Balance
2012	402,480	30,186	432,666
2013	432,666	32,450	465,116
2014	465,116	34,884	500,000

Annual Accretion = Present Value x New Credit-Adjusted Risk-Free Rate

(209,927 x 7.5%)

Depreciation Expense

Depreciation expense is calculated over the remaining life of the asset (12 years).

Year	Depreciation Expense
2003	17,494
2004	17,494
2005	17,494
2006	17,494
2007	17,494
2008	17,494
2009	17,494
2010	17,494
2011	17,494
2012	17,494
2013	17,494
2014	17,494
Total	209,927

Annual Depreciation Expense = Present Value / Remaining Life of Asset
(\$209,927 / 12)

8. Subsequent Cash Flow Decreases

Decreases in cash flow estimates must use the rate applied to the asset at the time the original ARO was calculated.

Original Cash Flow Estimate	993,893	Year 2002
Original Risk- Free Rate used	6.50%	Year 2002
Subsequent Revised Cash Flow	793,893	Year 2010
DELTA Decrease in Cash	(200,000)	Year 2010

Flow
 Original Risk-Free Rate Used **6.50%** Year 2002

New Layer of ARO

Incremental Decrease (200,000)
 Present Value (-200,000.00 / (1+6.5%)
 ^5) (145,976)

PV Calculation = incremental cash flow / (1+rate)^# Remaining years
 (1995 + 20 years = 2015, 2015 - CY 2010 = 5 yr. Remaining)

New Layer of Accretion/Depreciation

Accretion Expense

Accretion expense is calculated using the original credit-adjusted risk-free rate in effect at the time of implementation. The rate in effect in 2002 is 6.50%.

Year	Present Value	Annual Accretion Expense	Liability Balance
2010	(145,976)	(9,488)	(155,465)
2011	(155,465)	(10,105)	(165,570)
2012	(165,570)	(10,762)	(176,332)
2013	(176,332)	(11,462)	(187,793)
2014	(187,793)	(12,207)	(200,000)

Annual Accretion = Present Value x Original Credit-Adjusted Risk-Free Rate
 (145,976 x 6.5%)

Depreciation Expense

Depreciation expense is calculated over the remaining life of the asset (5 years).

Year	Depreciation Expense
2010	(29,195)
2011	(29,195)
2012	(29,195)
2013	(29,195)
2014	(29,195)
Total	(145,976)

Annual Depreciation Expense = Present Value / Remaining Life of Asset
 (145,976 / 5)

Calculating Multiple Year Cash Flows – (See Appendix A)

Assumptions used for the calculation of multiple year cash flows in Appendix A are shown below:

Nuclear Plant Dismantlement Schedule

- Assumptions
 - 40 Year Life
 - 4 years of estimated cash flows
 - Placed in Service 1990
 - Discount/Accretion Rate is 5%
- Estimated Annual Cash Flows
- Accretion Schedules
- PV Depreciation Schedules

Summary of Data for Journal Entry Consideration

Journal Entry Accounting for Regulated and Unregulated Operations

The purpose of this section is to provide accounting guidance on journal entry preparation for both regulated and unregulated operations resulting from the implementation of SFAS No. 143 including implementation, monthly journal entries subsequent to implementation, settlement of the obligation, and the retirement of the initial asset.

The impact on regulated entities resulting from SFAS No. 143 (implementation to settlement) will be income neutral and will be reflected as a regulatory asset/liability on the balance sheet as long as the recovery/refunding of the regulatory asset/liability is probable under SFAS No. 71. To the extent such recovery/refunding is not probable, there will be an impact on the income statement.

Journal entries from the example in Appendix B are shown for illustrative purposes. See Appendix B for “Unregulated and Regulated Operations – ARO Journal Entry Assumptions.”

Unregulated Operations

1) *Journal Entries Required at Implementation:* there are a number of journal entries required at implementation to properly reflect the effect of SFAS No. 143. These journal entries are:

- To record the initial fair value of the ARO asset and ARO liability,
- To record the effect of depreciation on the ARO asset from the time the ARO liability was incurred to implementation (offset is cumulative effect),
- To record the effect of accretion on the ARO liability from the time the ARO liability was incurred to implementation (offset is cumulative effect),

- To record the reversal of gross cost of removal liability accrued to date (offset is cumulative effect), if any
- To record taxes on the net cumulative effect on income (offset is cumulative effect).

Consolidated Entry at Implementation

DESCRIPTION	DEBIT	CREDIT
Long Lived Assets - ARO - <i>(New Account)</i>	282,064	
COR Liability Accrued to Date	500,000	
Cumulative Effect Adjustments		111,333
Accumulated Depreciation of ARO Asset - <i>(New Account)</i>		112,826
ARO Liability - <i>(New Account)</i>		466,815
Taxes Payable		91,090
<i>To record the Implementation of FAS 143</i>		

Individual Entries

To record the initial fair value of the ARO asset and ARO liability

Upon implementation of SFAS No. 143, the ARO liability (in current dollars) must be future valued at the anticipated inflation rate to when the projected cash outflows will occur and adjusted for a market risk premium as required by the Statement. The ARO liability must then be present valued back to when the liability was first incurred using the company's credit-adjusted risk-free rate. This present value of the future cash flows at the time the liability was first incurred is the ARO asset, which is to be depreciated using a systematic and rational allocation method. This amount is also the initial ARO liability before any accretion on the ARO liability to date of implementation and beyond.

DESCRIPTION	DEBIT	CREDIT
Long Lived Assets - ARO - <i>(New Account)</i>	282,064	
ARO Liability - <i>(New Account)</i>		282,064
<i>To record the initial present value of ARO liability</i>		
The ARO asset is valued at the present value of the liability at the time the liability is incurred.		
<i>The offset ARO Asset is the ARO Liability at implementation</i>		

To record the effect of depreciation on the ARO asset from the time the ARO liability was incurred to implementation

The ARO asset must be depreciated using a systematic and rational allocation method. This adjustment to the cumulative effect is for the accumulated depreciation that would have been recorded if the asset had been established at the time the ARO liability was incurred to date of implementation of SFAS No. 143.

DESCRIPTION	DEBIT	CREDIT
Cumulative Effect Adjustment	112,826	
Accumulated Depreciation of ARO Asset - <i>(New Account)</i>		112,826
<u>To record cumulative effect of ARO depreciation</u>		
Assumes the ARO Asset is depreciated over the same life and method as the asset for which the ARO is attached.		
The total depreciation that would have been incurred if the asset was established at the time the liability was incurred and depreciated to date is reflected as a Cumulative Effect of an Accounting Change.		

To record the effect of accretion on the ARO liability from the time the liability was incurred to implementation

The ARO liability must be accreted to the final future value of the ARO liability at the company's credit-adjusted risk-free rate. This adjustment to the cumulative effect is for the total life to date accretion that would have occurred if the ARO liability was established and accreted from the time the ARO liability was incurred to date of implementation of SFAS No. 143.

DESCRIPTION	DEBIT	CREDIT
Cumulative Effect Adjustment	184,751	
ARO Liability - <i>(New Account)</i>		184,751
<u>To record cumulative effect of accretion expense</u>		
The ARO liability must be accreted to the anticipated cash outlay		
The total accretion expense that would have been incurred if the liability was accreted from the time the liability was incurred to date is reflected as a Cumulative Effect of an Accounting Change.		

To record the reversal of gross cost of removal liability accrued to date

Any gross cost of removal liability accrued to date must be reversed from the balance sheet and offset against the cumulative effect.

DESCRIPTION	DEBIT	CREDIT
COR Liability Accrued to Date	500,000	
Cumulative Effect Adjustment		500,000
<u>To record the reversal of COR liability accrued to date</u>		
The COR liability currently reflected on the Balance Sheet must be fully reversed.		
The offset will be a Cumulative Effect of an Accounting Change.		

To record taxes payable or receivable on the net cumulative effect

The tax effect (based on the company's effective tax rate) of the cumulative effect must be reflected. *Note:* the deferred tax effect (based on the combined statutory tax rate) of the associated cumulative book versus tax timing difference must be reflected but is not

illustrated here. Deferred taxes need to be reflected at the combined statutory tax rate equal to the cumulative book and tax timing recognition on an ongoing basis.

DESCRIPTION	DEBIT	CREDIT
Cumulative Effect Adjustment (tax effect of total adjustments)	91,090	
Taxes Payable		91,090
<u>To record taxes payable on cumulative effect</u>		

2) *Monthly Journal Entries Subsequent to Implementation:* there are a number of journal entries that are required each month to properly reflect the effect of SFAS No. 143 on operations. These journal entries are:

- To record annual depreciation expense,
- To record annual accretion expense.

To record annual depreciation expense

Depreciation expense on the present value of the future cash flows at the time the liability was first incurred (ARO asset) must be recorded using a systematic and rational allocation method.

DESCRIPTION	DEBIT	CREDIT
Depreciation Expense	14,103	
Accumulated Depreciation of ARO Asset - (New Account)		14,103
<u>To record annual depreciation expense for 2003</u>		
Assumes the ARO Asset is depreciated over the same life and method as the asset for which the ARO is attached.		

DESCRIPTION	DEBIT	CREDIT
Depreciation Expense	250,000	
Accumulated Depreciation		250,000
<u>To record annual depreciation expense on \$5,000,000 asset for which ARO is attached</u>		
The \$5,000,000 asset for which the ARO is attached is already in the G/L systems and is shown for illustrative purposes.		

To record annual accretion expense

The ARO liability must be accreted at the company's credit-adjusted risk-free rate.

DESCRIPTION	DEBIT	CREDIT
Accretion Expense (New Account)	30,343	
ARO Liability - (New Account)		30,343
<u>To record annual accretion expense for 2003</u>		
The liability at implementation must be accreted to the anticipated cash outlay.		

3) *Settlement of the obligation and the retirement of the initial asset:* there are a number of journal entries that are required at the time the asset for which the ARO is attached is retired and the settlement of the ARO obligation is made to properly reflect the effect of SFAS No. 143 on operations. These journal entries are:

- To record retirement on asset for which the ARO is attached,
- To record retirement of ARO asset,
- To record gain or loss on settlement of ARO liability when liability is extinguished.

To record retirement on the asset for which the ARO is attached

The asset for which the ARO is attached is retired. Any gain or loss is to be reflected on the company's income statement. No gain or loss was assumed for this example.

DESCRIPTION	DEBIT	CREDIT
Accumulated depreciation	5,000,000	
Fixed Asset		5,000,000
<i>To record retirement of asset for which ARO is attached</i>		
The original asset for which the ARO is attached must be retired and any gain / loss reflected.		

To record retirement of an ARO Asset

When the ARO asset is retired the difference between any cash inflow (none for ARO assets) and the net book value of the ARO asset is to be reflected as a gain or loss on the company's income statement.

DESCRIPTION	DEBIT	CREDIT
Accumulated Depreciation of ARO Asset - (New Account)	282,064	
Long Lived Assets - ARO - (New Account)		282,064
<i>To record the retirement of ARO asset</i>		
The ARO Asset must be retired from the G/L Systems and any gain or loss reflected.		

To record gain or loss on settlement of an ARO liability

When the ARO liability is settled, any gain or loss resulting from the difference between the ARO liability currently reflected on the balance sheet and the total actual cash outflow to settle the liability must be reflected in operations. Any gain or loss should be reflected when the last cash payment is made and the gain or loss can be accurately calculated.

DESCRIPTION	DEBIT	CREDIT
ARO Liability - (New Account)	993,893	
Cash/Accounts payable		900,000
Gain / Loss on ARO Settlement - (New Account)		93,893
<i>To record the gain on settlement of ARO liability</i>		
A new account must be established to record any gain or loss from settlement of ARO Liability. The gain / loss is calculated by the difference between what is accreted on the liability and the cash outlay.		

Regulated Operations

The impact on regulated entities resulting from SFAS No. 143 (implementation to settlement) will be profit and loss neutral and will be reflected as a regulatory asset/liability on the balance sheet as long as the recovery of the regulatory asset/liability is probable under SFAS No. 71. Overall, the journal entries required at implementation, subsequent to implementation and settlement are primarily the same except that during implementation any cumulative effect that would have occurred in an unregulated environment would be reflected generally as a regulatory asset/liability in a regulatory environment to the extent the differences in ARO expense for SFAS No. 143 and ARO expense for ratemaking purposes will be reflected in rates. Any effect on earnings going forward from implementation that would have been realized in an unregulated environment would be reflected as a regulatory asset/liability in a regulated environment.

1) *Journal Entries Required at Implementation:* there are a number of journal entries required at implementation to properly reflect the effect of SFAS No. 143. These journal entries are:

- To record the initial fair value of the ARO asset and ARO liability,
- To record accumulated depreciation on the ARO asset from the time the ARO liability was incurred to implementation (offset is regulatory asset/liability),
- To record accumulated accretion on the ARO liability from the time the ARO liability was incurred to implementation (offset is regulatory asset/liability),
- To record the reversal of gross cost of removal liability accrued to date (offset is regulatory asset/liability).

Consolidated Entry at Implementation

DESCRIPTION	DEBIT	CREDIT
Long Lived Assets - ARO - <i>(New Account)</i>	282,064	
COR Liability Accrued to Date	500,000	
Regulatory Asset / Liability <i>(New Account)</i>		202,423
Accumulated Depreciation of ARO Asset - <i>(New Account)</i>		112,826
ARO Liability - <i>(New Account)</i>		466,815
<i>To record the Implementation of SFAS 143</i>		

Individual Entries

To record the initial fair value of the ARO asset and ARO liability

The journal entry to record the initial present value of the ARO asset and the ARO liability at implementation is the same for both regulated and unregulated entities.

Upon implementation of SFAS No. 143, the ARO liability (in current dollars) must be future valued at the anticipated inflation rate to when the projected cash outflows will

occur and adjusted for a market risk premium as required by the Statement. The ARO liability must then be present valued back to when the liability was first incurred using the company's credit-adjusted risk-free rate. This present value of the future cash flows at the time the liability was first incurred is the ARO asset to be depreciated using a systematic and rational allocation method. This amount is also the initial ARO liability before any accretion on the ARO liability to date of implementation and beyond.

DESCRIPTION	DEBIT	CREDIT
Long Lived Assets - ARO - <i>(New Account)</i>	282,064	
ARO Liability - <i>(New Account)</i>		282,064
<i>To record the initial present value of ARO liability</i>		
The ARO asset is valued at the present value of the liability at the time the liability is incurred.		
<i>The offset ARO Asset is the ARO Liability at implementation</i>		

To record the effect of depreciation on the ARO asset from the time the ARO liability was incurred to implementation

As with unregulated entities, the ARO asset must be depreciated using a systematic and rational allocation method. The total accumulated depreciation that would have been recorded if the asset were established at the time the ARO liability was incurred to date of implementation of SFAS No. 143 is reflected as a regulatory asset/liability on the regulated entity's balance sheet rather than as a component of the cumulative effect.

DESCRIPTION	DEBIT	CREDIT
Regulatory Asset/Liability - <i>(New Account)</i>	112,826	
Accumulated Depreciation of ARO Asset - <i>(New Account)</i>		112,826
<i>To record accumulated depreciation on ARO assets</i>		
Assumes the ARO Asset is depreciated over the same life and method as the asset for which the ARO is attached.		
The total depreciation that would have been incurred if the asset was established at the time the liability was incurred and depreciated to date is reflected as a Regulatory Asset .		

To record the effect of accretion on the ARO liability from the time the liability was incurred to implementation

As with unregulated entities, the ARO liability must be accreted to the final future value of the ARO liability at the company's credit-adjusted risk-free rate. The accumulated accretion that would have occurred if the ARO liability was established and accreted from the time the ARO liability was incurred to date of implementation of SFAS No. 143 is reflected as a regulatory asset/liability on the regulated entity's balance sheet rather than to the cumulative effect.

DESCRIPTION	DEBIT	CREDIT
Regulatory Asset/Liability - (New Account)	184,751	
ARO Liability - (New Account)		184,751
<u>To record accumulated accretion on ARO liability</u>		
The ARO liability must be accreted to the anticipated cash outlay		
The total accretion expense that would have been incurred if the liability was accreted from the time the liability was incurred to date is reflected as a Regulatory Asset .		

To record the reversal of gross cost of removal liability accrued to date

The gross cost of removal liability accrued to date must be reversed from the balance sheet (accumulated depreciation) and offset against the regulatory asset/liability.

DESCRIPTION	DEBIT	CREDIT
Accumulated Depreciation	500,000	
Regulatory Asset/Liability - (New Account)		500,000
<u>To reclassify existing Cost of Removal to regulatory asset/liability</u>		
The COR liability currently reflected on the Balance Sheet must be fully reversed from the reserve.		
The offset will be a Regulatory Liability .		

2) *Monthly Journal Entries Subsequent to Implementation:* there are a number of journal entries that are required each month to properly reflect the effect of SFAS No. 143 on operations. However, no depreciation on the ARO asset or accretion on the ARO liability is reflected on the regulated entity's income statement, but rather these adjustments are recorded to the regulatory asset/liability on the balance sheet as the effect of SFAS No. 143 is income neutral as long as recovery is probable under SFAS No. 71. The entries to reflect both depreciation and accretion expense are originally made to the appropriate expense category. However, the monthly amounts are then adjusted from the expense category to a regulatory asset/liability. These journal entries are:

- To record annual depreciation expense,
- To record annual accretion expense.

To record annual depreciation expense

The present value of the future cash flows at the time the liability was first incurred (ARO asset) must be depreciated using a systematic and rational allocation method. The difference between the depreciation being recovered in rates and the depreciation for the ARO will be recorded as a regulatory asset/liability on the balance sheet.

DESCRIPTION	DEBIT	CREDIT
Depreciation Expense	14,103	
Accumulated Depreciation of ARO Asset - <i>(New Account)</i>		14,103
<u>To record annual depreciation expense</u>		
Assumes the ARO Asset is depreciated over the same life and method as the asset for which the ARO is attached.		

DESCRIPTION	DEBIT	CREDIT
Regulatory Asset/Liability - <i>(New Account)</i>	14,103	
Depreciation Expense		14,103
<u>To reverse annual depreciation to regulatory asset/liability (Utility is I/S Neutral)</u>		
The monthly depreciation expense must be reflected against a Regulatory Asset so that all effects of FAS 143 are Income Statement neutral.		

DESCRIPTION	DEBIT	CREDIT
Depreciation Expense	250,000	
Accumulated Depreciation		250,000
<u>To record annual depreciation expense on \$5,00,000 asset for which ARO is attached</u>		
The \$5,000,000 asset for which the ARO is attached is already in the G/L systems and is shown for illustrative purpose		

To record monthly accretion expense

Every month, the ARO liability must be accreted to the final future value of the ARO liability at the company's credit-adjusted risk-free rate. The amount accreted is to be reclassified to a regulatory asset/liability on the balance sheet.

DESCRIPTION	DEBIT	CREDIT
Accretion Expense (New Account)	30,343	
ARO Liability - <i>(New Account)</i>		30,343
<u>To record annual accretion expense on ARO liability</u>		
The liability at implementation must be accreted to the anticipated cash outlay.		

DESCRIPTION	DEBIT	CREDIT
Regulatory Asset/Liability - <i>(New Account)</i>	30,343	
Accretion Expense		30,343
<u>To reverse annual accretion expense to regulatory asset/liability (Utility is I/S neutral)</u>		
The monthly depreciation expense must be reflected against a Regulatory Asset so that all effects of FAS 143 are Income Statement neutral.		

3) *Settlement of the obligation and the retirement of the initial asset:* there are a number of journal entries that are required at the time the asset for which the ARO is attached is retired and the settlement of the ARO obligation is made to properly reflect the effect of SFAS No. 143 on operations. However, no gain or loss on the settlement of either the ARO asset or the ARO liability is reflected on the regulated entity's income statement, but rather these adjustments are recorded to the regulatory asset/liability on the balance sheet as the effect of SFAS No. 143 is profit and loss neutral as long as recovery of the regulatory asset/liability is probable under SFAS No. 71. These journal entries are:

- To record retirement on the asset for which the ARO is attached,
- To record retirement of ARO asset,

- To record settlement of ARO liability.

To record retirement of ARO Asset

When the ARO asset is retired the difference between any cash inflow (none for ARO assets) and the net book value of the ARO asset is to be recorded to a regulatory asset on the company's balance sheet.

DESCRIPTION	DEBIT	CREDIT
Accumulated Depreciation of ARO Asset - <i>(New Account)</i>	282,064	
Long Lived Assets - ARO - <i>(New Account)</i>		282,064
<i>To record the retirement of ARO asset</i>		
The ARO Asset must be retired from the G/L Systems and any gain or loss reflected. The gain / loss is recorded to a Regulation Asset / Liability.		

To record retirement on the asset for which the ARO is attached

When the asset for which the ARO is attached is retired any gain or loss is to be reflected as a regulatory asset/liability or in the provision for accumulated depreciation, or income statement depending on the asset and the regulatory accounting related to that asset.

DESCRIPTION	DEBIT	CREDIT
Accumulated depreciation	5,000,000	
Fixed Asset		5,000,000
<i>To record retirement of asset for which ARO related</i>		
The original asset for which the ARO is attached must be retired and any gain / loss reflected.		

To record settlement of the ARO liability

In a regulated environment, when the ARO liability is settled, the difference between the ARO liability currently reflected on the balance sheet and the total actual cash outflow to settle that liability must be recorded to a regulatory asset/liability on the balance sheet. This adjustment should be made when the last cash payment is made and the difference between the ARO liability on the balance sheet and total cash outflows can be accurately calculated.

DESCRIPTION	DEBIT	CREDIT
ARO Liability - <i>(New Account)</i>	993,893	
Cash/Accounts payable		900,000
Regulatory Asset/Liability - <i>(New Account)</i>		93,893
<i>To record the gain on settlement of ARO liability</i>		
The gain / loss is calculated by the difference between what is accreted on the liability and the cash outlay. The gain / loss is recorded to a Regulation Asset / Liability.		

Other Considerations (Unregulated and Regulated Operations)

- The original asset for which the ARO is attached, the ARO asset and the ARO liability must be linked within the General Ledger Systems.
- The original asset for with the ARO is attached, the ARO asset and the ARO liability must be retired at the same time and any gain or loss recognized upon settlement (unregulated).
- Corporate systems should be programmed to record monthly depreciation and accretion expense so that manual entries are not required.
- Accretion on the ARO liability and depreciation on the ARO asset will stop upon settlement.

(See Appendix B for Unregulated and Regulated Operations – ARO Journal Entry Assumptions)

Financial Statement Disclosure

Requirements of the Standard

The final stage of implementing SFAS No. 143 is the complying with disclosure requirements. The statement contains two disclosure requirements found in paragraph 22 which are:

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 of 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 therefore shall be disclosed.

The second disclosure requirements involves a transition disclosure requirement found in paragraph 27:

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 shall be computed using information current at the time of adoption, current assumptions and current interest rates. It appears that this transition disclosure is a one-time measurement since the ongoing disclosure would replace this information going forward.

Appendix B of SFAS No. 143, titled "Background Information and Basis for Conclusions," provides some background information but does not provide any additional guidance on disclosure. If an entity does not have assets that fall within the scope of this Standard, there is no disclosure requirement.

For those entities with assets that fall within the scope of the Standard, the source of information will obviously be available from the measurement, calculation process, and journal entry process described previously. Without specific guidance, the content and format of the disclosure will likely evolve over time. For many, the disclosure may take the form of a separate footnote. The content and style of disclosure will likely vary depending on such individual circumstances as the number or types of assets or the related obligations, differences in measurement approaches, consolidations of companies and business segments, and the materiality of the details. Other circumstances affecting this disclosure for the gas and electric utility industry will be related to application of SFAS No. 71, and the final conclusions by FERC in Docket RM02-7 that may involve changes in the Uniform System of Accounts to accommodate SFAS No. 143.

Other transitional disclosure requirements

Until the Statement is implemented, there is a disclosure requirement for adoption of new accounting pronouncements (SAB 74). Basically, an entity is to provide qualitative or quantitative information, when available, about the expected impact of implementation, updated quarterly.

Other related disclosure impacts

Disclosure

Additional disclosure issues exist beyond the requirements of the Statement such as other notes to the financial statements involving property, depreciation, or estimates. Current and proposed disclosure rules of the Securities and Exchange Commission (SEC) should also be reviewed for additional SFAS No. 143 related disclosures.

Impairments

SFAS No. 143 will result in an increase in the carrying amount of an asset equal to the calculated asset cost. As a result, a test of impairment and recoverability should be performed in accordance with SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets."

Record Keeping Issues

The Edison Electric Institute (EEI) and The American Gas Association (AGA) do not support specific regulations related to record keeping requirements for ARO's. As companies develop strategies and methods for the implementation and on-going reviews required for the Standard, various methods may evolve over time on how ARO's will be determined and measured. Because of this, EEI and AGA believe that companies should be allowed flexibility for maintaining the associated records. Basic accounting guidelines require that companies maintain sufficient, detailed records in order to support information provided in financial statements.

EEI and AGA have developed some suggested record keeping guidelines that may help companies develop their own policies. They are as follows:

- 1) Documentation of communications with Business Units/Functions. The initial documentation of these discussions should be very detailed and thorough. Each year, a review of this documentation should be done to determine any changes, new issues, etc.
- 2) Documentation of the due diligence analysis provided by the legal department as to what is considered a legal obligation and why. This should also include discussions surrounding issues that were ultimately not determined to be legal obligations and why. The legal department should then perform an annual review for any changes, new issues, etc. This should also include a review of the Business Units/Functions documentation referred to in item 1) above.
- 3) Support for all items associated with the calculation of the ARO including, but not limited to, the following:
 - Third-party written estimates and related assumptions, or
 - Internal cost estimates including assumptions for profits or mark-up, overheads, market risk premium, etc.,
 - Timing of cash outflows,
 - Inflation rate,
 - Risk-free credit rate,
 - Estimated retirement dates,
 - Amortization schedules for interest accretion expense,
 - Depreciation schedules.
- 4) Support for ARO transactions and balances included in the regulatory asset and liability accounts.
- 5) Periodic Audits - Companies should conduct regular audits for ARO's subject to SFAS No. 143. Companies should prepare written audit instructions that ensure the following:
 - A methodical review of company assets, plus the authorities that might impose ARO's,

- A procedure for sampling voluminous, repetitive records (e.g., form contracts, easements),
- A record of the audit itself, including:
 - personnel and records reviewed,
 - assets reviewed,
 - authorities reviewed with respect to each asset,
 - legal determination made as to each authority ,
 - basis of any cost calculations.

Appendix A – Multiple Year Cash Flows

Nuclear Plant Dismantlement Schedule
 40 Year Life Present Value at 5 %
 Placed in Service 1990

2030	400,000,000.00	56,818,272.92	40 years
2031	500,000,000.00	67,640,801.10	41 years
2032	600,000,000.00	77,303,772.68	42 years
2033	200,000,000.00	24,540,880.22	43 years
	<u>1,700,000,000.00</u>	<u>226,303,726.91</u>	

40 Years

Year	Liability Bal 1/1	Accretion 5.0 %	Liab Bal 12/31	Year-End Unit 1	Accretion Exp Original PV	Deprec. Exp 56,818,272.92	Total Expense
1990	56,818,272.92	2,840,913.65	59,659,186.57	1990	2,840,913.65	1,420,456.82	4,261,370.47
1991	59,659,186.57	2,982,959.33	62,642,145.89	1991	2,982,959.33	1,420,456.82	4,403,416.15
1992	62,642,145.89	3,132,107.29	65,774,253.19	1992	3,132,107.29	1,420,456.82	4,552,564.12
1993	65,774,253.19	3,288,712.66	69,062,965.85	1993	3,288,712.66	1,420,456.82	4,709,169.48
1994	69,062,965.85	3,453,148.29	72,516,114.14	1994	3,453,148.29	1,420,456.82	4,873,605.12
1995	72,516,114.14	3,625,805.71	76,141,919.85	1995	3,625,805.71	1,420,456.82	5,046,262.53
1996	76,141,919.85	3,807,095.99	79,949,015.84	1996	3,807,095.99	1,420,456.82	5,227,552.82
1997	79,949,015.84	3,997,450.79	83,946,466.63	1997	3,997,450.79	1,420,456.82	5,417,907.62
1998	83,946,466.63	4,197,323.33	88,143,789.96	1998	4,197,323.33	1,420,456.82	5,617,780.15
1999	88,143,789.96	4,407,189.50	92,550,979.46	1999	4,407,189.50	1,420,456.82	5,827,646.32
2000	92,550,979.46	4,627,548.97	97,178,528.44	2000	4,627,548.97	1,420,456.82	6,048,005.80
2001	97,178,528.44	4,858,926.42	102,037,454.86	2001	4,858,926.42	1,420,456.82	6,279,383.24
2002	102,037,454.86	5,101,872.74	107,139,327.60	2002	5,101,872.74	1,420,456.82	6,522,329.57
				T T L S to D a t e	50,321,054.68	18,465,938.70	
2003	107,139,327.60	5,356,966.38	112,496,293.98	2003	5,356,966.38	1,420,456.82	6,777,423.20
2004	112,496,293.98	5,624,814.70	118,121,108.68	2004	5,624,814.70	1,420,456.82	7,045,271.52
2005	118,121,108.68	5,906,055.43	124,027,164.11	2005	5,906,055.43	1,420,456.82	7,326,512.26
2006	124,027,164.11	6,201,358.21	130,228,522.32	2006	6,201,358.21	1,420,456.82	7,621,815.03
2007	130,228,522.32	6,511,426.12	136,739,948.43	2007	6,511,426.12	1,420,456.82	7,931,882.94
2008	136,739,948.43	6,836,997.42	143,576,945.86	2008	6,836,997.42	1,420,456.82	8,257,454.24
2009	143,576,945.86	7,178,847.29	150,755,793.15	2009	7,178,847.29	1,420,456.82	8,599,304.12
2010	150,755,793.15	7,537,789.66	158,293,582.81	2010	7,537,789.66	1,420,456.82	8,958,246.48
2011	158,293,582.81	7,914,679.14	166,208,261.95	2011	7,914,679.14	1,420,456.82	9,335,135.96
2012	166,208,261.95	8,310,413.10	174,518,675.04	2012	8,310,413.10	1,420,456.82	9,730,869.92
2013	174,518,675.04	8,725,933.75	183,244,608.80	2013	8,725,933.75	1,420,456.82	10,146,390.58
2014	183,244,608.80	9,162,230.44	192,406,839.24	2014	9,162,230.44	1,420,456.82	10,582,687.26
2015	192,406,839.24	9,620,341.96	202,027,181.20	2015	9,620,341.96	1,420,456.82	11,040,798.78
2016	202,027,181.20	10,101,359.06	212,128,540.26	2016	10,101,359.06	1,420,456.82	11,521,815.88
2017	212,128,540.26	10,606,427.01	222,734,967.27	2017	10,606,427.01	1,420,456.82	12,026,883.84
2018	222,734,967.27	11,136,748.36	233,871,715.63	2018	11,136,748.36	1,420,456.82	12,557,205.19
2019	233,871,715.63	11,693,585.78	245,565,301.42	2019	11,693,585.78	1,420,456.82	13,114,042.60
2020	245,565,301.42	12,278,265.07	257,843,566.49	2020	12,278,265.07	1,420,456.82	13,698,721.89
2021	257,843,566.49	12,892,178.32	270,735,744.81	2021	12,892,178.32	1,420,456.82	14,312,635.15
2022	270,735,744.81	13,536,787.24	284,272,532.05	2022	13,536,787.24	1,420,456.82	14,957,244.06
2023	284,272,532.05	14,213,626.60	298,486,158.65	2023	14,213,626.60	1,420,456.82	15,634,083.43
2024	298,486,158.65	14,924,307.93	313,410,466.59	2024	14,924,307.93	1,420,456.82	16,344,764.76
2025	313,410,466.59	15,670,523.33	329,080,989.92	2025	15,670,523.33	1,420,456.82	17,090,980.15
2026	329,080,989.92	16,454,049.50	345,535,039.41	2026	16,454,049.50	1,420,456.82	17,874,506.32
2027	345,535,039.41	17,276,751.97	362,811,791.38	2027	17,276,751.97	1,420,456.82	18,697,208.79
2028	362,811,791.38	18,140,589.57	380,952,380.95	2028	18,140,589.57	1,420,456.82	19,561,046.39
2029	380,952,380.95	19,047,619.05	400,000,000.00	2029	19,047,619.05	1,420,456.82	20,468,075.87
2030	400,000,000.00						

Appendix A – Multiple Year Cash Flows

41 Years

Year	Liability Bal 1/1	Accretion 5.0 %	Liab Bal 12/31	Year-End Unit 1	Accretion Exp Original PV	Deprec. Exp 67,640,801.10	Total Expense
1990	67,640,801.10	3,382,040.05	71,022,841.15	1990	3,382,040.05	1,649,775.64	5,031,815.69
1991	71,022,841.15	3,551,142.06	74,573,983.21	1991	3,551,142.06	1,649,775.64	5,200,917.69
1992	74,573,983.21	3,728,699.16	78,302,682.37	1992	3,728,699.16	1,649,775.64	5,378,474.80
1993	78,302,682.37	3,915,134.12	82,217,816.49	1993	3,915,134.12	1,649,775.64	5,564,909.75
1994	82,217,816.49	4,110,890.82	86,328,707.31	1994	4,110,890.82	1,649,775.64	5,760,666.46
1995	86,328,707.31	4,316,435.37	90,645,142.68	1995	4,316,435.37	1,649,775.64	5,966,211.00
1996	90,645,142.68	4,532,257.13	95,177,399.81	1996	4,532,257.13	1,649,775.64	6,182,032.77
1997	95,177,399.81	4,758,869.99	99,936,269.80	1997	4,758,869.99	1,649,775.64	6,408,645.63
1998	99,936,269.80	4,996,813.49	104,933,083.29	1998	4,996,813.49	1,649,775.64	6,646,589.13
1999	104,933,083.29	5,246,654.16	110,179,737.46	1999	5,246,654.16	1,649,775.64	6,896,429.80
2000	110,179,737.46	5,508,986.87	115,688,724.33	2000	5,508,986.87	1,649,775.64	7,158,762.51
2001	115,688,724.33	5,784,436.22	121,473,160.54	2001	5,784,436.22	1,649,775.64	7,434,211.85
2002	121,473,160.54	6,073,658.03	127,546,818.57	2002	6,073,658.03	1,649,775.64	7,723,433.66
				T T L S to D a t e	59,906,017.48	21,447,083.27	
2003	127,546,818.57	6,377,340.93	133,924,159.50	2003	6,377,340.93	1,649,775.64	8,027,116.57
2004	133,924,159.50	6,696,207.98	140,620,367.48	2004	6,696,207.98	1,649,775.64	8,345,983.61
2005	140,620,367.48	7,031,018.37	147,651,385.85	2005	7,031,018.37	1,649,775.64	8,680,794.01
2006	147,651,385.85	7,382,569.29	155,033,955.14	2006	7,382,569.29	1,649,775.64	9,032,344.93
2007	155,033,955.14	7,751,697.76	162,785,652.90	2007	7,751,697.76	1,649,775.64	9,401,473.39
2008	162,785,652.90	8,139,282.64	170,924,935.54	2008	8,139,282.64	1,649,775.64	9,789,058.28
2009	170,924,935.54	8,546,246.78	179,471,182.32	2009	8,546,246.78	1,649,775.64	10,196,022.41
2010	179,471,182.32	8,973,559.12	188,444,741.44	2010	8,973,559.12	1,649,775.64	10,623,334.75
2011	188,444,741.44	9,422,237.07	197,866,978.51	2011	9,422,237.07	1,649,775.64	11,072,012.71
2012	197,866,978.51	9,893,348.93	207,760,327.43	2012	9,893,348.93	1,649,775.64	11,543,124.56
2013	207,760,327.43	10,388,016.37	218,148,343.81	2013	10,388,016.37	1,649,775.64	12,037,792.01
2014	218,148,343.81	10,907,417.19	229,055,761.00	2014	10,907,417.19	1,649,775.64	12,557,192.83
2015	229,055,761.00	11,452,788.05	240,508,549.05	2015	11,452,788.05	1,649,775.64	13,102,563.69
2016	240,508,549.05	12,025,427.45	252,533,976.50	2016	12,025,427.45	1,649,775.64	13,675,203.09
2017	252,533,976.50	12,626,698.82	265,160,675.32	2017	12,626,698.82	1,649,775.64	14,276,474.46
2018	265,160,675.32	13,258,033.77	278,418,709.09	2018	13,258,033.77	1,649,775.64	14,907,809.40
2019	278,418,709.09	13,920,935.45	292,339,644.54	2019	13,920,935.45	1,649,775.64	15,570,711.09
2020	292,339,644.54	14,616,982.23	306,956,626.77	2020	14,616,982.23	1,649,775.64	16,266,757.86
2021	306,956,626.77	15,347,831.34	322,304,458.11	2021	15,347,831.34	1,649,775.64	16,997,606.97
2022	322,304,458.11	16,115,222.91	338,419,681.01	2022	16,115,222.91	1,649,775.64	17,764,998.54
2023	338,419,681.01	16,920,984.05	355,340,665.07	2023	16,920,984.05	1,649,775.64	18,570,759.69
2024	355,340,665.07	17,767,033.25	373,107,698.32	2024	17,767,033.25	1,649,775.64	19,416,808.89
2025	373,107,698.32	18,655,384.92	391,763,083.23	2025	18,655,384.92	1,649,775.64	20,305,160.55
2026	391,763,083.23	19,588,154.16	411,351,237.40	2026	19,588,154.16	1,649,775.64	21,237,929.80
2027	411,351,237.40	20,567,561.87	431,918,799.27	2027	20,567,561.87	1,649,775.64	22,217,337.51
2028	431,918,799.27	21,595,939.96	453,514,739.23	2028	21,595,939.96	1,649,775.64	23,245,715.60
2029	453,514,739.23	22,675,736.96	476,190,476.19	2029	22,675,736.96	1,649,775.64	24,325,512.60
2030	476,190,476.19	23,809,523.81	500,000,000.00	2030	23,809,523.81	1,649,775.64	25,459,299.45
2031	500,000,000.00			2031			

Appendix A – Multiple Year Cash Flows

42 Years

Year	Liability Bal 1/1	Accretion 5.0 %	Liab Bal 12/31	Year-End Unit 1	Accretion Exp Original PV	Deprec. Exp 77,303,772.68	Total Expense
1990	77,303,772.68	3,865,188.63	81,168,961.31	1990	3,865,188.63	1,840,566.02	5,705,754.65
1991	81,168,961.31	4,058,448.07	85,227,409.38	1991	4,058,448.07	1,840,566.02	5,899,014.08
1992	85,227,409.38	4,261,370.47	89,488,779.85	1992	4,261,370.47	1,840,566.02	6,101,936.49
1993	89,488,779.85	4,474,438.99	93,963,218.84	1993	4,474,438.99	1,840,566.02	6,315,005.01
1994	93,963,218.84	4,698,160.94	98,661,379.78	1994	4,698,160.94	1,840,566.02	6,538,726.96
1995	98,661,379.78	4,933,068.99	103,594,448.77	1995	4,933,068.99	1,840,566.02	6,773,635.01
1996	103,594,448.77	5,179,722.44	108,774,171.21	1996	5,179,722.44	1,840,566.02	7,020,288.45
1997	108,774,171.21	5,438,708.56	114,212,879.77	1997	5,438,708.56	1,840,566.02	7,279,274.58
1998	114,212,879.77	5,710,643.99	119,923,523.76	1998	5,710,643.99	1,840,566.02	7,551,210.00
1999	119,923,523.76	5,996,176.19	125,919,699.95	1999	5,996,176.19	1,840,566.02	7,836,742.20
2000	125,919,699.95	6,295,985.00	132,215,684.95	2000	6,295,985.00	1,840,566.02	8,136,551.01
2001	132,215,684.95	6,610,784.25	138,826,469.19	2001	6,610,784.25	1,840,566.02	8,451,350.26
2002	138,826,469.19	6,941,323.46	145,767,792.65	2002	6,941,323.46	1,840,566.02	8,781,889.48
		-		T T L S to Date	68,464,019.97	23,927,358.21	
2003	145,767,792.65	7,288,389.63	153,056,182.29	2003	7,288,389.63	1,840,566.02	9,128,955.65
2004	153,056,182.29	7,652,809.11	160,708,991.40	2004	7,652,809.11	1,840,566.02	9,493,375.13
2005	160,708,991.40	8,035,449.57	168,744,440.97	2005	8,035,449.57	1,840,566.02	9,876,015.59
2006	168,744,440.97	8,437,222.05	177,181,663.02	2006	8,437,222.05	1,840,566.02	10,277,788.06
2007	177,181,663.02	8,859,083.15	186,040,746.17	2007	8,859,083.15	1,840,566.02	10,699,649.17
2008	186,040,746.17	9,302,037.31	195,342,783.48	2008	9,302,037.31	1,840,566.02	11,142,603.32
2009	195,342,783.48	9,767,139.17	205,109,922.65	2009	9,767,139.17	1,840,566.02	11,607,705.19
2010	205,109,922.65	10,255,496.13	215,365,418.78	2010	10,255,496.13	1,840,566.02	12,096,062.15
2011	215,365,418.78	10,768,270.94	226,133,689.72	2011	10,768,270.94	1,840,566.02	12,608,836.96
2012	226,133,689.72	11,306,684.49	237,440,374.21	2012	11,306,684.49	1,840,566.02	13,147,250.50
2013	237,440,374.21	11,872,018.71	249,312,392.92	2013	11,872,018.71	1,840,566.02	13,712,584.73
2014	249,312,392.92	12,465,619.65	261,778,012.57	2014	12,465,619.65	1,840,566.02	14,306,185.66
2015	261,778,012.57	13,088,900.63	274,866,913.19	2015	13,088,900.63	1,840,566.02	14,929,466.64
2016	274,866,913.19	13,743,345.66	288,610,258.85	2016	13,743,345.66	1,840,566.02	15,583,911.68
2017	288,610,258.85	14,430,512.94	303,040,771.80	2017	14,430,512.94	1,840,566.02	16,271,078.96
2018	303,040,771.80	15,152,038.59	318,192,810.39	2018	15,152,038.59	1,840,566.02	16,992,604.61
2019	318,192,810.39	15,909,640.52	334,102,450.91	2019	15,909,640.52	1,840,566.02	17,750,206.54
2020	334,102,450.91	16,705,122.55	350,807,573.45	2020	16,705,122.55	1,840,566.02	18,545,688.56
2021	350,807,573.45	17,540,378.67	368,347,952.12	2021	17,540,378.67	1,840,566.02	19,380,944.69
2022	368,347,952.12	18,417,397.61	386,765,349.73	2022	18,417,397.61	1,840,566.02	20,257,963.62
2023	386,765,349.73	19,338,267.49	406,103,617.22	2023	19,338,267.49	1,840,566.02	21,178,833.50
2024	406,103,617.22	20,305,180.86	426,408,798.08	2024	20,305,180.86	1,840,566.02	22,145,746.88
2025	426,408,798.08	21,320,439.90	447,729,237.98	2025	21,320,439.90	1,840,566.02	23,161,005.92
2026	447,729,237.98	22,386,461.90	470,115,699.88	2026	22,386,461.90	1,840,566.02	24,227,027.92
2027	470,115,699.88	23,505,784.99	493,621,484.88	2027	23,505,784.99	1,840,566.02	25,346,351.01
2028	493,621,484.88	24,681,074.24	518,302,559.12	2028	24,681,074.24	1,840,566.02	26,521,640.26
2029	518,302,559.12	25,915,127.96	544,217,687.07	2029	25,915,127.96	1,840,566.02	27,755,693.97
2030	544,217,687.07	27,210,884.35	571,428,571.43	2030	27,210,884.35	1,840,566.02	29,051,450.37
2031	571,428,571.43	28,571,428.57	600,000,000.00	2031	28,571,428.57	1,840,566.02	30,411,994.59
2032	600,000,000.00			2032			

Appendix A – Multiple Year Cash Flows

43 Years

Year	Liability Bal 1/1	Accretion 5.0%	Liab Bal 12/31	Year-End Unit 1	Accretion Exp Original P V	Deprec. Exp 24,540,880.22	Total Expense
1990	24,540,880.22	1,227,044.01	25,767,924.23	1990	1,227,044.01	570,718.14	1,797,762.16
1991	25,767,924.23	1,288,396.21	27,056,320.44	1991	1,288,396.21	570,718.14	1,859,114.36
1992	27,056,320.44	1,352,816.02	28,409,136.46	1992	1,352,816.02	570,718.14	1,923,534.17
1993	28,409,136.46	1,420,456.82	29,829,593.28	1993	1,420,456.82	570,718.14	1,991,174.97
1994	29,829,593.28	1,491,479.66	31,321,072.95	1994	1,491,479.66	570,718.14	2,062,197.81
1995	31,321,072.95	1,566,053.65	32,887,126.59	1995	1,566,053.65	570,718.14	2,136,771.79
1996	32,887,126.59	1,644,356.33	34,531,482.92	1996	1,644,356.33	570,718.14	2,215,074.47
1997	34,531,482.92	1,726,574.15	36,258,057.07	1997	1,726,574.15	570,718.14	2,297,292.29
1998	36,258,057.07	1,812,902.85	38,070,959.92	1998	1,812,902.85	570,718.14	2,383,621.00
1999	38,070,959.92	1,903,548.00	39,974,507.92	1999	1,903,548.00	570,718.14	2,474,266.14
2000	39,974,507.92	1,998,725.40	41,973,233.32	2000	1,998,725.40	570,718.14	2,569,443.54
2001	41,973,233.32	2,098,661.67	44,071,894.98	2001	2,098,661.67	570,718.14	2,669,379.81
2002	44,071,894.98	2,203,594.75	46,275,489.73	2002	2,203,594.75	570,718.14	2,774,312.89
		-		T T L S to D a t e	21,734,609.52	7,419,335.88	
2003	46,275,489.73	2,313,774.49	48,589,264.22	2003	2,313,774.49	570,718.14	2,884,492.63
2004	48,589,264.22	2,429,463.21	51,018,727.43	2004	2,429,463.21	570,718.14	3,000,181.36
2005	51,018,727.43	2,550,936.37	53,569,663.80	2005	2,550,936.37	570,718.14	3,121,654.52
2006	53,569,663.80	2,678,483.19	56,248,146.99	2006	2,678,483.19	570,718.14	3,249,201.33
2007	56,248,146.99	2,812,407.35	59,060,554.34	2007	2,812,407.35	570,718.14	3,383,125.49
2008	59,060,554.34	2,953,027.72	62,013,582.06	2008	2,953,027.72	570,718.14	3,523,745.86
2009	62,013,582.06	3,100,679.10	65,114,261.16	2009	3,100,679.10	570,718.14	3,671,397.25
2010	65,114,261.16	3,255,713.06	68,369,974.22	2010	3,255,713.06	570,718.14	3,826,431.20
2011	68,369,974.22	3,418,498.71	71,788,472.93	2011	3,418,498.71	570,718.14	3,989,216.86
2012	71,788,472.93	3,589,423.65	75,377,896.57	2012	3,589,423.65	570,718.14	4,160,141.79
2013	75,377,896.57	3,768,894.83	79,146,791.40	2013	3,768,894.83	570,718.14	4,339,612.97
2014	79,146,791.40	3,957,339.57	83,104,130.97	2014	3,957,339.57	570,718.14	4,528,057.71
2015	83,104,130.97	4,155,206.55	87,259,337.52	2015	4,155,206.55	570,718.14	4,725,924.69
2016	87,259,337.52	4,362,966.88	91,622,304.40	2016	4,362,966.88	570,718.14	4,933,685.02
2017	91,622,304.40	4,581,115.22	96,203,419.62	2017	4,581,115.22	570,718.14	5,151,833.36
2018	96,203,419.62	4,810,170.98	101,013,590.60	2018	4,810,170.98	570,718.14	5,380,889.13
2019	101,013,590.60	5,050,679.53	106,064,270.13	2019	5,050,679.53	570,718.14	5,621,397.67
2020	106,064,270.13	5,303,213.51	111,367,483.64	2020	5,303,213.51	570,718.14	5,873,931.65
2021	111,367,483.64	5,568,374.18	116,935,857.82	2021	5,568,374.18	570,718.14	6,139,092.33
2022	116,935,857.82	5,846,792.89	122,782,650.71	2022	5,846,792.89	570,718.14	6,417,511.04
2023	122,782,650.71	6,139,132.54	128,921,783.24	2023	6,139,132.54	570,718.14	6,709,850.68
2024	128,921,783.24	6,446,089.16	135,367,872.41	2024	6,446,089.16	570,718.14	7,016,807.31
2025	135,367,872.41	6,768,393.62	142,136,266.03	2025	6,768,393.62	570,718.14	7,339,111.76
2026	142,136,266.03	7,106,813.30	149,243,079.33	2026	7,106,813.30	570,718.14	7,677,531.45
2027	149,243,079.33	7,462,153.97	156,705,233.29	2027	7,462,153.97	570,718.14	8,032,872.11
2028	156,705,233.29	7,835,261.66	164,540,494.96	2028	7,835,261.66	570,718.14	8,405,979.81
2029	164,540,494.96	8,227,024.75	172,767,519.71	2029	8,227,024.75	570,718.14	8,797,742.89
2030	172,767,519.71	8,638,375.99	181,405,895.69	2030	8,638,375.99	570,718.14	9,209,094.13
2031	181,405,895.69	9,070,294.78	190,476,190.48	2031	9,070,294.78	570,718.14	9,641,012.93
2032	190,476,190.48	9,523,809.52	200,000,000.00	2032	9,523,809.52	570,718.14	10,094,527.67
2033	200,000,000.00			2033			

Appendix A – Multiple Year Cash Flows

Summary of Data for Journal Entry Consideration

January 1, 2003

	Debit	Credit	
Long-lived asset increase (asset retirement cost)	226,303,726.91		Present Value
Accumulated Depreciation on the Books (To date Decommission Fund + Fund Earnings Ttits)	-		Calculated YE 2002
Cumulative-effect adjustment DR = UNDERFUNDED CR = OVERFUNDED	271,685,417.71		
Accumulated Depreciation		71,259,716.06	PV Depreciated through 2002
ARO liability		426,729,428.56	Accretion to Date PLUS PV
Total	497,989,144.62	497,989,144.62	

December 31, 2003

Depreciation exp annual 2003	5,481,516.62		Per schedule summed 2003 from each schedule
Accumulated dep annual 2003		5,481,516.62	
Accretion exp annual 2003	21,336,471.43		Per schedule summed 2003 from each schedule
ARO liability 2003		21,336,471.43	
Total	26,817,988.05	26,817,988.05	

Appendix B – Unregulated and Regulated Operations ARO Journal Entry Assumptions

Implementation Date:	01/01/03
Date Asset was placed in service;	01/01/95
Asset Useful Life:	20
Retirement Date:	12/31/14
Future Value (Inflation) Rate:	4%
Discount Rate (Credit-adjusted risk-free rate):	6.5%
Contractor's Mark-up:	20%
Market Risk Premium	5%
COR Liability Accrued to Date or Cost embedded in Accumulated Depreciation:	\$500,000
Cash Payment to settle ARO on 12/31/14:	\$900,000
Depreciation is calculated based on:	20
Accretion is calculated by using the credit-adjusted risk-free rate	6.5%
Original Asset Value (for which ARO is attached)	\$5,000,000
Corporate tax rate:	45.0%

Initial Measurement of the ARO liability at 01/01/03

Labor	\$200,000
Overheads & Equipment (80% X \$200,000)	\$160,000
Contractor's Mark-up (20% X (\$200,000 + \$160,000))	\$72,000
Expected Cash Flows Before Inflation	<u>\$432,000</u>
Expected Cash Flows Adjusted for Inflation	
Inflation Factor assuming 4% for 20 years ($\$432,000 \times (1 + 4\%)^{20}$)	\$946,565
From 01/01/95 to 12/31/14	
Market Risk Premium (\$946,565 X 5%)	<u>\$47,328</u>
Total Expected Cash Flows (1)	<u>\$993,893</u>
Present Value using the credit-adjusted risk-free rate ($\$993,893 / (1 + 6.5\%)^{20}$) (2)	<u>\$282,064</u>

NOTE:

(1) The amount represents the future value of the ARO (i.e., the anticipated liability amount (expected cash flow) when the asset is removed. This is the amount that the current liability ($\$282,064 + \$184,751 = \$466,815$) would accrete to every month from implementation date (assuming 01/01/03 in this example) to 12/31/14 at a rate of 6.5%. G/L Systems should be programmed to calculate the monthly accretion from the original liability (\$466,815) to the expected cash flows at 12/31/14. Total final liability is \$993,893.

(2) The initial ARO liability as of 01/01/03 and the capitalized asset cost is to be provided. No GL calculation will be required.

ADDITIONAL CONFIGURATION REQUIREMENTS:

1. There must be a way to link the original asset (\$500,000) and ARO asset (\$282,064) and the liability (\$466,815 to \$993,893)
2. The original asset, ARO asset and ARO liability must be retired at the same time. The accretion on the ARO liability stops upon settlement.



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