Accounting for asset retirement obligations: an education & nonprofit perspective*
I. Introduction

Asbestos poses well-documented health risks. It was commonly used in fireproofing, insulation, and building materials, including in the facilities of colleges, universities and other types of not-for-profit organizations. In the 1970s, the Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) began to regulate asbestos in the U.S. When asbestos-containing buildings are renovated, strict regulations now cover the handling and disposal of the hazardous substance.

The accounting for such costs is catching up with the regulations. According to a 2001 pronouncement of the Financial Accounting Standards Board (FASB), institutions should record a liability for legal obligations associated with the retirement of tangible, long-lived assets, such as asbestos-containing facilities, when the amount of the liability can be reasonably estimated. Some argued that it was not possible to reasonably estimate the amount of the future liability. In 2005, the FASB clarified its position, concluding that legal obligations, like the cost of disposing asbestos, must be recorded using the best information that is currently available.

Although the FASB pronouncements pertain to other types of long-lived asset retirement obligations, asbestos is likely to come to mind frequently. Another example would be a not-for-profit organization that leases a facility for a specified period and must, at the end of the period, dispose of leasehold improvements.

Our objectives

We believe that it will take significant effort for institutions to comply with FASB’s pronouncements concerning legal obligations associated with the retirement of long-lived assets. Such efforts must begin immediately as the latest pronouncement is effective for fiscal years ending after December 15, 2005, which is fiscal 2006 for most colleges, universities and other types of not-for-profit organizations.

We urge you to begin to understand the issues and prepare for this new challenge as soon as possible. The objective of this paper is to assist you in becoming more informed about the issues that we see colleges, universities and other not-for-profit organizations facing as they begin to implement these new FASB pronouncements.

II. SFAS 143 and FIN 47

SFAS 143

The FASB issued its Statement No. 143, Accounting for Asset Retirement Obligations (SFAS 143), in June 2001. It requires entities, including colleges, universities and other types of not-for-profit institutions, to record liabilities for tangible, long-lived assets that must be retired or disposed of (i.e., “settled”) in a specified way by law or contract. Such liabilities are known as Asset Retirement Obligations (AROs).

After the issuance of SFAS 143, diversity in practice developed over the timing of liability recognition when the settlement was conditional on a future event. Some entities recorded the ARO at the date of acquisition or construction with uncertainty factored into the calculation of the ARO’s fair value. Other entities recognized the ARO only when it was probable that the asset would be retired as of a specified date using a specified method. Some entities recorded the ARO when the asset was actually retired.

FIN 47

Due to this diversity in application of SFAS 143, the FASB issued Interpretation No. 47, Accounting for Conditional Asset Retirement Obligations (FIN 47), in March 2005. In paragraph 3 of FIN 47, a “conditional asset retirement obligation” (CARO) is defined as:

“A legal obligation to perform an asset retirement activity in which the timing and/or method of settlement are conditional on a future event that may or may not be within the control of the entity. The obligation to perform the asset retirement activity is unconditional even though uncertainty exists about the timing and/or method of settlement.”

FIN 47 clarifies that if the fair value of the liability can be reasonably estimated, the entity must recognize a liability for the CARO when it is incurred. The only “conditional” element is the uncertainty related to the timing or method of settlement, which is a measurement issue, not a recognition issue.

PwC observation: FIN 47 does not create a “new” standard for recognition of CAROs. It clarifies the Board’s belief that SFAS 143 applies to CAROs.
FIN 47 provides additional guidance for assessing whether an institution has enough information to make a reasonable estimate of the fair value of an ARO. Per FIN 47, the liability is reasonably estimable if one of the following exists:

- It is evident that the fair value of the obligation is embodied in the acquisition price of the purchased asset, or
- An active market exists for the transfer of the obligation, or
- “Sufficient information” exists to apply an expected present value technique.

Regarding the latter, sufficient information exists if either:

- The settlement date and the settlement method have been specified by others by law, regulation or contract, or;
- The following can be reasonably estimated: (1) the settlement date or a range of dates, (2) the method or potential method of settlement, and (3) probabilities associated with the dates and methods of settlement.

FIN 47 concludes that uncertainty about the settlement date and method does not defer the recognition of an ARO because a legal obligation to perform the retirement activities still exists. The likelihood that “we can’t estimate” a CARO will be acceptable to your external auditor is remote. The “opt out” provision will not be a common alternative.

FIN 47 is effective for most institutions in the current fiscal year (e.g., the year ending June 30, 2006). The initial recognition for the initial application of FIN 47 will be presented as a cumulative effect of a change in accounting principle in the statement of activities.

We summarize important terms from SFAS 143 and FIN 47 in Table 1.

### Table 1

<table>
<thead>
<tr>
<th>Important terms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Conditional Asset Retirement Obligation (CARO)</strong> is a legal obligation to perform an asset retirement activity in which the timing and/or method of settlement are conditional on a future event that may or may not be within the control of the entity. However, the obligation to perform the asset retirement activity is unconditional.</td>
</tr>
<tr>
<td><strong>An Asset Retirement Obligation (ARO)</strong> is a legal obligation (i.e., a liability) for the cost of retiring (i.e., “settling”) a tangible long-lived asset (e.g., a building containing asbestos) that results from the acquisition, construction, or development and (or) the normal operation of that long-lived asset.</td>
</tr>
<tr>
<td><strong>The Asset Retirement Cost (ARC)</strong> is the capitalized amount that increases the carrying amount of the long-lived asset when a liability for an ARO is recognized. Note that the ARC is the “debit” to offset the “credit” when the ARO is recognized.</td>
</tr>
<tr>
<td><strong>The settlement date</strong> is the estimated date or range of dates that the institution has to meet its legal obligation to dispose of the asbestos, for example.</td>
</tr>
<tr>
<td><strong>The settlement method</strong> concerns how the institution might dispose of the asbestos. For example, will it hire a third party?</td>
</tr>
</tbody>
</table>
III. Implementation

Identifying and estimating potential AROs will require the skills of a multidisciplinary team. We recommend establishing a team that includes representatives from legal, accounting, operations (e.g., facilities and engineering), finance and budget. Major steps in the implementation process include those listed below.

1. Take an inventory.

The first step, and perhaps one of the most time-consuming steps, will be taking an inventory of long-lived assets that have retirement obligations.

2. Determine if there is sufficient information.

The team must determine if the institution has sufficient information to reasonably estimate the value of the ARO using, for most institutions, an expected present value technique. We suggest using the following decision tree.

3. Measure the obligation.

An ARO is initially measured at fair value. An institution can use either an observable market price (i.e., current market price for the service required) or a reasonable estimate as a starting point for measurement. Most institutions will use the expected cash flow approach discussed in FASB Concepts Statement 7 (CON 7), *Using Cash Flow Information and Present Value in Accounting Measurements*. SFAS 143 (paragraph 8) states:

“... the expected cash flow approach will usually be the only appropriate technique for an asset retirement obligation.”

The expected cash flow approach incorporates multiple cash flow scenarios to reflect a range of possible outcomes, discounted at a credit-adjusted risk-free rate.

Institutions can use past experience to help determine how the ARO would be settled. How has the institution retired long-lived obligations in the past? The answer to this question would probably provide management with a good starting point.
The inflation rate should reflect the increase that management is estimating for the type(s) of service(s) that will be required to remove the legal obligation. Again, for determining the institution’s credit-adjusted risk-free rate, past experience, or even current experience, may be a useful guide. This rate may approximate the institution’s borrowing rate for a similar amount over a similar period of time.

For a more detailed discussion of each of these elements, see the Q&A in Appendix A of this paper.

4. Develop appropriate policies and documentation. Institutions will need to develop written policies to codify the accounting for FIN 47/SFAS 143 transactions. In addition, they will need to adequately document their assumptions as well as the estimates that support their financial statement accruals and disclosures. Keep in mind that the auditors will need to audit all significant judgments and estimates.

PwC observation: If an institution concludes that it cannot make a reasonable estimate of the obligation, SFAS 143 requires that it disclose that fact along with the reasons. In these situations, the institution should make sure to adequately document its analysis and the basis for its conclusion. Further, it should develop and implement procedures to periodically reevaluate its conclusion.

5. Develop financial reports and disclosures.

Financial reporting
At initial adoption, institutions should recognize the items in Table 2 in their statements of financial position and statements of activities.

Disclosures
Significant SFAS 143 disclosure requirements include a description of AROs, the fair value of the assets restricted for purposes of settling retirement obligations (if any), and a reconciliation of the beginning and ending carrying amount of the ARO. In addition, in the initial year of adoption, institutions are required to provide pro forma disclosure of the amount of the liability for AROs as if SFAS 143 had been applied for all periods presented. Also, institutions should consider the disclosures required by paragraphs 19(c), 19(d) and 21 of APB Opinion No. 20, Accounting Changes.

PwC observation: The transition provisions described above are not impacted by the issuance of SFAS Statement No. 154, Accounting Changes and Error Corrections.

Table 2
Recognition of ARO on statement of financial position and statement of activities

<table>
<thead>
<tr>
<th>Statement of financial position</th>
<th>Statement of activities</th>
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<tbody>
<tr>
<td>Initial adoption</td>
<td></td>
</tr>
<tr>
<td>■ Record ARO equal to the fair</td>
<td>■ Record net impact as a</td>
</tr>
<tr>
<td>value of the legal obligation,</td>
<td>cumulative effect</td>
</tr>
<tr>
<td>adjust for cumulative</td>
<td>of a change in</td>
</tr>
<tr>
<td>accretion to date of adoption</td>
<td>accounting principle</td>
</tr>
<tr>
<td>■ Capitalize ARO by increasing</td>
<td></td>
</tr>
<tr>
<td>the carrying value of the asset</td>
<td></td>
</tr>
<tr>
<td>(the asset retirement cost</td>
<td></td>
</tr>
<tr>
<td>or ARC), adjust for cumulative</td>
<td></td>
</tr>
<tr>
<td>depreciation</td>
<td></td>
</tr>
<tr>
<td>■ Reverse amounts recognized</td>
<td></td>
</tr>
<tr>
<td>previously</td>
<td></td>
</tr>
<tr>
<td>■ Recognize effects of</td>
<td></td>
</tr>
<tr>
<td>regulatory treatment</td>
<td></td>
</tr>
<tr>
<td>by recording or adjusting</td>
<td></td>
</tr>
<tr>
<td>regulatory assets and liabilities</td>
<td></td>
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</tbody>
</table>
IV. Conclusion

We believe that institutions should immediately begin identifying long-lived assets with AROs. The process will take time. For each ARO, institutions will need to determine the settlement date, the settlement method, and the settlement cost using current dollars. They will then need to inflate the cost to the settlement date and discount the future cost using a credit-adjusted risk-free rate and record the ARO. This is for the first year; annually thereafter, the work will need to be updated and adjusted.

The FASB’s presumption in SFAS 143 is that, with the exception of land, assets do not last forever, and legal obligations to retire assets in a legally mandated manner must eventually be met. When there is asbestos in a building, for example, the institution will eventually have to replace the HVAC or the walls containing asbestos. The legal obligation to dispose of the asbestos in a certain way exists. It is a question of when (settlement date) the obligation will be incurred and how (method of settlement) the obligation will be fulfilled. The guidance in FIN 47 makes it unlikely that institutions will be able to defer recording liabilities for AROs.

Appendix A

Frequently asked questions

In this Appendix, we explore three categories of implementation issues. The first category is the non-industry-specific issues that entities must consider when implementing FIN 47/SFAS 143. The second category is the implementation issues that are unique to colleges, universities and other types of not-for-profit organizations. The third category is accounting issues that may arise in the years after implementation of this standard.

A. Non-industry-specific implementation issues

How should my organization begin implementing FIN 47/SFAS 143?

Management needs to look at this in two parts. First, does the organization have a legal obligation to take action as a result of owning (or operating) a particular asset. This is a “yes” or “no” question. If the answer is “no,” there is no ARC or ARO that needs to be recorded. If the response is “yes,” then move to step two.

We strongly recommend that institutions seek advice from counsel on the timing and structure of their legal obligations. See also the question on page 10 about how legislation might impact the CARO.

Once a legal obligation is established, the next step is to address measurement issues. Management needs to determine how and when to address the legal obligation. Then management needs to assign a probability factor to each option. (Note that the sum of the probabilities needs to equal 100%.) After this, apply the inflation rate and discount rate to determine the amount of the ARC and ARO.

Can I set FIN 47 aside and address it during the fiscal year-end close?

No. The impact of FIN 47 can be significant. Identifying a team that includes financial, physical plant, legal, and other officers and staff is essential, and might require start-up time. We highly recommend that efforts to assess FIN 47 be started as soon as possible and that the audit committee (or similar governing body) be kept abreast of the developments.
Can I take the position that I cannot estimate the ARO, and therefore nothing has to be recorded?

Rarely. Example 3 of FIN 47 includes an example of a situation where an organization does not have sufficient information to estimate an ARO. In most cases, we believe sufficient information will be available to estimate the fair value of the ARO. Although an organization may have no plans or expectation of plans to undertake a major renovation that would require removal of the asbestos, organizations should consider the useful life of the long-lived asset, technology changes, operational changes, the entity’s past practice or industry practice and other factors that may impact the timing of a major renovation.

If management is unable to arrive at the necessary estimates to perform the calculation, FIN 47 requires that management disclose the reasons why in the footnotes. For example, an organization might disclose what actions management took to obtain settlement cost estimates or to identify legal obligations and why reasonable settlement dates could not be determined. It would be expected that determining discount rates and inflation rates would not be the cause for not recording an ARO.

What if the settlement date is not known?

The exact settlement date will probably not be known. FIN 47 concludes that if a range of possible settlement dates exists, the ARO can be estimated. Organizations will need to work with the range of possible dates, make assumptions and calculate probabilities, which in sum will equal 100%, to establish a liability for the ARO.

PwC observation: The FASB noted that uncertainty regarding timing and method of settlement are factors relevant to the measurement of the liability, not the recognition of the liability.

Does the timing of retirement have to coincide with the asset’s useful life?

No. The asset’s depreciable life provides one data point about the potential timing of its retirement. Also, management might need to make a distinction between the physical lives of 100% of the asset’s components and the date the retirement obligation will be settled.
to obtain in order to fulfill its legal obligation regarding the settlement. This inflation rate may be different than a general inflation factor for the organization’s industry or geographic location. Management should ensure that its inflation estimates are comparable to those used in other models, such as the organization’s long-term budgeting models.

Should I consider component parts?
Yes. SFAS 143 (paragraph A14) states:

“An asset retirement obligation may exist for component parts of a larger system. In some circumstances, the retirement of the component parts may be required before the retirement of the larger system to which the component parts belong.”

If the recognition criteria have been met, SFAS 143 requires organizations to identify the costs of retirement that can be measured and recorded as part of an organization’s AROs. Note that buildings with component parts may be an advantage. It might be easier to segregate the disposal costs.

In SFAS 143, the FASB provides an example of an ARO with component parts—a kiln lined with a special type of brick. The bricks become contaminated with hazardous chemicals during use and they wear out after five years. When the bricks are removed, they must be disposed of at a hazardous waste site. The disposal of the bricks would be covered by SFAS 143, but the cost of the replacement bricks and their installation would not be part of the ARO.

Another example would be asbestos that is wrapped around HVAC pipes. An organization would not necessarily have to tear down an entire building to remove its obligation; rather it would need to remove/replace the HVAC pipes that are wrapped in asbestos.

What impact might FIN 47 have on other financial metrics?
Management should evaluate all instances in which financial results or performance metrics are utilized, such as bond covenants, Title IV ratios, benchmarking, third-party rankings and credit ratings. Management should meet with lenders and other affected parties as soon as possible to discuss the impact of FIN 47 and any modifications to existing agreements that may be necessary.

Is there a practice aid that I can use as I begin to assess FIN 47’s impact on my organization?
The checklist included in Appendix C of this paper may be helpful in assisting management to begin to assess FIN 47’s impact.

B. Q&A for industry-specific implementation issues

What is the impact on the operating results for the year of adoption?
In the year of adoption, the cumulative effect of the AROs would be reported on the institution’s statement of activities as a cumulative change of an accounting principle. This impact would be reflected in a separate line directly before the total change in net assets as part of unrestricted net assets.

What is the impact on fund accounting?
For institutions that use fund accounting for internal reporting purposes, the ARC and ARO would be recorded in “Invested in Plant Fund,” as would the annual ARC depreciation and ARO accretion.

What is the impact on functional expenses?
In a manner similar to that used to allocate interest expense across functional expense categories, the ARC depreciation and ARO accretion would be reported in a functional expense category. Management will need to review the purpose of the asset for which the ARC and ARO are related. If the annual depreciation/accretion expenses are associated with a piece of research equipment, then those depreciation/accretion expenses should be classified as “research.” If the depreciation/accretion expenses are related to a HVAC system in a multi-purpose building, then the depreciation/accretion expenses should probably be allocated among functional expense categories in a manner similar to those used for the annual interest expense on that specific building.

What impact might FIN 47/SFAS 143 have on sponsored research programs?
The impact of FIN 47/SFAS 143 should be discussed with your federal oversight agency as soon as it is reasonably estimated. Your institution may want to negotiate an agreement with the agency to recover the cumulative impact to net assets. The federal agency may not allow a reimbursement all in
one fiscal year, but may allow the amount to be recovered over a specified period.

The annual impact of FIN 47/SFAS 143 will be allocated to the affected facilities. Since some of the facilities (and equipment) might be for research, the institution may be able to negotiate an increase in its federal indirect cost rate prior to the expiration of the current agreement. It will be important for institutions to demonstrate that a rigorous analysis was performed to identify the obligations as well as to determine the cost estimates and the allocation methodology.

Even prior to considering the impact on the federal indirect cost recovery rate, institutions that are required to submit a DS-2 should begin to assess the impact of FIN 47/SFAS 143. Again, communication with the applicable federal agency that approves the DS-2 is important in order to inform them that such a change will be submitted.

Does the Clean Air Act or any other legislation impact the CARO?
Legislation (including the three acts described below that set limits on pollutants, hazardous substances, and toxic chemicals) might impact the CARO. Institutions should consult with legal counsel about the timing of legislation and how it might affect the capitalization of the CARO.

1) Clean Air Act
The Clean Air Act, codified as 42 U.S.C. 7401 et seq., is the comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. It sets limits on how much of a pollutant (e.g., asbestos fibers) can be in the air. The U.S. Congress passed the Clean Air Act in 1963, the Clean Air Act Amendment in 1966, the Clean Air Act Extension in 1970, and Clean Air Act Amendments in 1977 and 1990.

2) Pollution Prevention Act (PPA)
The Pollution Prevention Act of 1990, codified as 42 U.S.C. 13101-13109, focuses on reducing the amount of hazardous substances, pollutants or contaminants being released into the environment that may harm the environment or public health.

3) Toxic Substances Control Act (TSCA)
The Toxic Substances Control Act (TSCA, 15 U.S.C. 2601 et seq.) authorizes EPA to screen existing and new chemicals used in manufacturing and commerce to identify potentially dangerous products or uses that should be subject to federal control. As enacted, TSCA also included a provision requiring EPA to take specific measures to control the risks from polychlorinated biphenyls (PCBs) [Section 6(e)]. Subsequently, three titles have been added to address concerns about other specific toxic substances—asbestos in 1986, radon in 1988, and lead in 1992.

C. Subsequent accounting
What if an ARO is identified subsequent to the year of adopting FIN 47?
Management has a responsibility to make a concerted effort to identify the complete population of AROs in the year of adoption. Subsequent “discoveries” of unidentified AROs could call into question the adequacy of management’s initial attempt to address these requirements, as well as raise questions as to what other unidentified AROs still exist.

If an ARO is identified subsequent to initial adoption of FIN 47, then management and their auditors need to assess for materiality. If the subsequently discovered ARO is material and should have been recorded in a prior period, then management may be required to restate previously issued financial statements.

This is why it is imperative that a multi-discipline team be assembled in order to identify potential AROs. The team should be comprised of members from finance, physical plant, research, legal, purchasing, technicians, etc. It is also recommended that the team perform an actual walk-through of the facilities in order to ensure the completeness of the list of potential AROs.

What are the changes in the ARO due to the passage of time?
Because the ARO is initially recorded at fair value (i.e., it is discounted from the expected settlement date), SFAS 143 requires that organizations recognize changes in the ARO that result from the passage of time.

Organizations should determine the interest component resulting from the passage of time by applying the interest method of allocation. In applying this method, the organization should use the credit-adjusted risk-free rate(s) applied when the liability (or a portion thereof) was initially measured. Changes resulting from the passage of time should be recognized as an increase in the carrying amount of the liability, with a corresponding period cost classified in the operating section of the income statement. The amount should be
separately disclosed to the extent it is material. SFAS 143 allows the use of any descriptor for this item “so long as it conveys the underlying nature of the expense.” (Note: Accretion amounts recognized in accordance with SFAS 143 cannot be included as interest costs for purposes of applying SFAS Statement No. 34, Capitalization of Interest Cost.)

A change that is due to the passage of time should be incorporated prior to any revisions that are made to the ARO as a result of changes in either the timing or amount of estimated cash flows.

Table 3 below summarizes the financial statement impact of changes due to the passage of time.

Based on current available information, I need to change my ARO estimates. How should I handle this?

As indicated above, management is required to review their estimates on an annual basis (but no changes are to be made to the inflation rate or discount rate). A new method to address the legal obligation may become available or more current cost estimates may be obtained, or there may be changes in the expected timing of settlement. Management will need to recalculate the ARO based on any changes in the underlying estimates and record the changes to the ARO in the current year. If the asset is fully depreciated, subsequent changes to the ARO will be recorded directly in the current year statement of activities. If the asset is not fully depreciated, any subsequent changes to the ARO will also result in an increase or decrease in carrying amount of the related long-lived asset.

What if there are changes in the amount of undiscounted cash flows?

SFAS 143 requires that organizations recognize changes in the ARO that result from revisions made to the amount of future cash flows. Such changes should be recognized in the period of change as an increase or decrease in: a) the carrying amount of the ARO and b) the related asset retirement costs capitalized as part of the carrying amount of the related long-lived asset. Except for fully-depreciated assets, the adjustment initially will not have any income statement impact in the period of change. However, it will impact the future recognition of depreciation and accretion expense.

The change in obligation amount should be measured using the following credit-adjusted risk-free interest rate:

- Increases in the ARO: Consider upward revisions of future cash flows as a new obligation, which should be initially measured using the current credit-adjusted risk-free interest rate.
- Decreases in the ARO: Consider downward revisions in cash flow estimates as an adjustment to the existing ARO. Measure the adjustment at the historical interest rate used to measure the initial ARO to which the downward revision relates.

Organizations will have to document and track the rates used to measure and record the initial ARO and any incremental adjustments.

Table 3

<table>
<thead>
<tr>
<th>Financial statement impact of ARO over time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Statement of financial position</strong></td>
</tr>
<tr>
<td>Passage of time</td>
</tr>
<tr>
<td>■ ARO: increase ARO by amount of periodic accretion expense</td>
</tr>
<tr>
<td>■ ARC: allocate to expense through a systematic and rational method over useful life</td>
</tr>
<tr>
<td>■ Recognize effects of regulatory treatment</td>
</tr>
<tr>
<td><strong>Statement of activities</strong></td>
</tr>
<tr>
<td>■ Record periodic accretion expense as a component of operating expense</td>
</tr>
<tr>
<td>■ Record ARC depreciation</td>
</tr>
<tr>
<td>■ Recognize effects of regulatory treatment</td>
</tr>
</tbody>
</table>
What if there are revisions to the timing of future cash flows?

SFAS 143 also requires that organizations recognize changes in the ARO that result from revisions made to the timing of future cash flows. Under the expected cash flow approach, the credit-adjusted risk-free rate for each scenario will depend on the expected timing of the cash outflows. That is, if an organization has scenarios under which the retirement could occur in 2010, 2025 and 2030, each scenario would be discounted at a different credit-adjusted risk-free interest rate based on the forward yield curves at the date the obligation is calculated. The applicable discount rate is determined based on the year of expected settlement.

How should I consider AROs and ARCs in their asset impairment tests?

Management must test for impairment and recoverability in accordance with FASB Statement No. 144 (SFAS 144), *Accounting for the Impairment of Disposal of Long-Lived Assets*. SFAS 143 (paragraph 12) states:

“In applying the provisions of Statement 144, the carrying amount of the asset being tested for impairment shall include amounts of capitalized asset retirement costs. Estimated future cash flows related to the liability for an asset retirement obligation that has been recognized in the financial statements should be excluded from (a) the undiscounted cash flows used to test the asset for recoverability and (b) the discounted cash flows used to measure the asset’s fair value.”

If the organization was not previously including the cost of retirement or disposal in the impairment test, the increase in the asset carrying value could result in an impairment that must be recorded at the time of adoption of SFAS 143/FIN 47. Subsequent increases to the asset retirement cost, if significant, should also be considered for potential impairment.

I’ve completed the settlement of the ARO, now what?

Once the legal obligation is eliminated, then the corresponding ARC (net amount) and ARO must be removed from the organization’s financial records. As a result of the removal, the organization may need to recognize a gain or loss on settlement because of the utilization of internal resources (as opposed to the third-party estimates used in the cash flow analysis).
Appendix B

Examples

Fully depreciated assets
Let’s consider the case of a college that has determined that it has six buildings with asbestos in the ceilings. Two of the buildings are used for teaching and the other four are dormitories. The two classroom buildings were constructed in 1970 and the dormitories were constructed in 1975. Although the buildings’ depreciable lives are 30 years, the original ceilings are still in place. The college’s master plan (as well as its shorter-term facilities annual plan) specifies that the ceilings will be replaced within the next 10 years at an estimated disposal cost of $1 million or $2 million, based on third-party estimates and depending on how the replacement will be performed. The institutions’ credit-adjusted risk-free rate is 5% and inflation is assumed to be 2%.

The ARO calculation requires two schedules, one for the classrooms (see below) and another for the dormitories (see next page). We are assuming that all other factors are identical within these two groups.

#1: Classroom buildings

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Replacement date (A)</th>
<th>Settlement cost (B)</th>
<th>Probability</th>
<th>Future value (C)</th>
<th>Discounted cost (D)</th>
<th>Probability-weighted ARO (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>2011</td>
<td>$1,000,000</td>
<td>25%</td>
<td>$1,126,162</td>
<td>$194,440</td>
<td>$48,610</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>2011</td>
<td>$2,000,000</td>
<td>75%</td>
<td>$2,252,325</td>
<td>$388,881</td>
<td>$291,660</td>
</tr>
</tbody>
</table>

$340,270 (i - to above)

(A) The replacement date is based on management’s “best estimate” for removal. In our example, we estimated the date based on the institution’s master capital plan.

(B) The settlement cost ($1 million and $2 million) is stated in current (2005) dollars. We are assuming that a cost study was conducted on one building and that the conditions are the same for the second building.

(C) The future value is the settlement cost adjusted for 2% inflation from 2005 until the replacement date.

(D) This is the discounted cost of the future value, discounted back to when the legal obligation was created. For this example, we are assuming legislation became effective in 1975. Therefore, the discount is calculated back to 1975. (Institutions should seek legal advice on the timing of their obligations.)

(E) The probability-weighted ARO is the discounted cost weighted for the probability of each scenario.

#1 Classrooms

The following entries would have been made in 1975 to record the ARO based on the above scenario:

Dr. Asset retirement cost $340,270 (i - from below)
Cr. ARO $340,270

Since the ceilings are fully depreciated by 2005, there is no entry to record the asset retirement cost (as that would be fully depreciated by 2005 as well). To record the liability at June 30, 2005:

Initial ARO in 1975 $340,270 (i - from below)

Accretion in 1976 at 5%
(credit-adjusted risk free rate) $17,014 ($340,270 x 0.05)†

ARO in 1976 $357,284††

ARO at June 30, 2005 (after 30 years) $1,470,630††

† Note that the amount is not a fixed amount each year as the interest method is used.

†† In 1976, multiply the $357,284 by 5% (to get $17,864). Add the two together ($357,284 + $17,864 = $375,148). In 1977, multiply the $375,148 by 5% (to get $18,757). Add the two together ($375,148 + $18,757 = $393,906). Continue this process until the year ended June 30, 2006 when the result would be $1,470,630. A similar process would be used in the examples on the following pages.
#2: Dormitories

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Replacement date (F)</th>
<th>Settlement cost (G)</th>
<th>Probability</th>
<th>Future value (H)</th>
<th>Discounted cost (I)</th>
<th>Probability-weighted ARO (J)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>2010</td>
<td>$1,000,000</td>
<td>10%</td>
<td>$1,104,081</td>
<td>$200,189</td>
<td>$20,016</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>2010</td>
<td>$2,000,000</td>
<td>50%</td>
<td>$2,208,162</td>
<td>$400,318</td>
<td>$200,159</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>2015</td>
<td>$1,000,000</td>
<td>10%</td>
<td>$1,218,994</td>
<td>$173,153</td>
<td>$17,315</td>
</tr>
<tr>
<td>Scenario 4</td>
<td>2015</td>
<td>$2,000,000</td>
<td>30%</td>
<td>$2,437,989</td>
<td>$346,306</td>
<td>$103,892</td>
</tr>
</tbody>
</table>

(F) The replacement date is based on the institution’s master plan for replacement of the ceilings. In 2015, the institution plans to renovate the entire group of dormitory buildings.

(G) The settlement cost ($1 million and $2 million) is stated in current (2005) dollars. We are assuming that a cost study was conducted on one building and that the conditions are the same for the three other buildings.

(H) The future value is the settlement cost adjusted for 2% inflation from 2005 until the replacement date.

(I) This is the discounted cost of the future value, discounted back to the date of construction. We are assuming that the date of construction and the date when the legal obligation began are the same.

(J) The probability-weighted ARO is the discounted cost weighted for the probability of each scenario.

#1 Classrooms, continued

For the year ended on June 30, 2006, the cumulative catch-up adjustment would be as follows:

Dr. Cumulative change in accounting principle $1,470,630
Dr. Current interest expense $73,531 ($1,470,630 x 0.05)
Cr. ARO $1,544,161

Each year, the accretion at 5% would continue to be recorded until the settlement date. The calculation would be updated for changes in settlement date or cost of settlement (with no change to the credit-adjusted risk-free rate or inflation for the initial ARO, once they are established in the initial calculation). These changes would be recognized as normal period costs through the statement of activities.

#2: Dormitories (continued)

To record the liability at June 30, 2005:

Initial ARO in 1970 $341,382
Accretion at 5%
(credit-adjusted risk-free rate) $17,069 ($341,382 x 0.05)
ARO at June 30, 2005 (after 35 years) $1,470,630

For the fiscal year ended June 30, 2006, the cumulative catch-up adjustment and current year expense would be as follows:

Dr. Cumulative change in accounting principle $1,475,434
Dr. Current year expense $73,772 ($1,470,630 x 0.05)
Cr. ARO $1,549,206

Similar to the classroom example, the accretion at 5% would continue to be recorded until the settlement date and the calculation would be updated for changes in settlement date or cost of settlement (there would be no change to credit-adjusted risk-free rate or inflation, once they are established in the initial calculation). These changes would be recognized as normal period costs through the statement of activities.
#3: Classroom buildings

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Replacement date (K)</th>
<th>Settlement cost (L)</th>
<th>Probability</th>
<th>Future value (M)</th>
<th>Discounted cost (N)</th>
<th>Probability-weighted ARO (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>2011</td>
<td>$1,000,000</td>
<td>25%</td>
<td>$1,126,162</td>
<td>$404,227</td>
<td>$101,057</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>2011</td>
<td>$2,000,000</td>
<td>75%</td>
<td>$2,252,325</td>
<td>$808,455</td>
<td>$606,341</td>
</tr>
</tbody>
</table>

(K) The replacement date is based on management's “best estimate” for removal. In our example, we estimated the date based on the institution's master capital plan.

(L) The settlement cost ($1 million and $2 million) is stated in current (2005) dollars. We are assuming that a cost study was conducted on one building and that the conditions are the same for the second building; therefore, the settlement cost is the same.

(M) The future value is the settlement cost adjusted for 2% inflation from 2005 until the replacement date.

(N) This is the discounted cost of the future value, discounted back to the date of construction. We are assuming that the date of construction and the date when the legal obligation began are the same.

(O) The probability-weighted ARO is the discounted cost weighted for the probability of each scenario.

#3: Classroom buildings (assets not fully depreciated)

For this example, assume the same facts as above, but the classroom buildings were acquired in 1990, have a remaining useful life of 20 years, and are not yet fully depreciated.

The following entries would have been made in 1990 to record the ARO:

- **Dr. Asset retirement cost** $707,398 (iii - from above)
- **Cr. ARO** $707,398

Since the ceilings are not fully depreciated by 2005, there is an entry to record the accumulated depreciation on the asset through June 30, 2005 and the 2006 depreciation expense:

- **Dr. Cumulative change in accounting principle** $530,549
- **Dr. Current year depreciation** $35,370 ($707,398 x 0.05)
- **Cr. Accumulated Depreciation** $565,919

To calculate the ARO balance in 2005:

- **Initial ARO in 1990** $707,398
- **Accretion in 1991 at 5% (credit-adjusted risk free rate)** $35,370 ($707,398 x 0.05)
- **ARO at June 30, 2005 (after 15 years)** $1,470,630
- **Accretion in 2006** $73,531 ($1,470,630 x 0.05)
- **ARO at June 30, 2006** $1,544,161

At June 30, 2005, the cumulative catch-up adjustment would be as follows:

- **Dr. Cumulative change in accounting principle** $763,232
- **Cr. ARO** $763,232

The net impact of the two entries in fiscal year 2006 is:

- **Dr. Asset retirement cost** $707,398 (iii - from above)
- **Dr. Current year depreciation expense** $35,370 ($707,398 x 0.05)
- **Dr. Cumulative change in accounting principle** $1,293,781
- **Dr. Current ARO accretion** $73,531 ($1,470,630 x 0.05)
- **Cr. Accumulated depreciation** $565,919
- **Cr. ARO** $1,544,161

As in the above examples, each year, the accretion at 5% would continue to be recorded until the settlement date. The calculation would be updated for changes in settlement date or cost of settlement (with no change to the credit-adjusted risk-free rate or inflation for the initial ARO, once they are established in the initial calculation). These changes would be recognized as normal period costs through the statement of activities.

Interested readers can find other examples in Appendix C and D of SFAS 143.

††† $1,470,630 - $707,398
Appendix C

Implementation checklist

1. Develop a policy to consider asset retirement obligations during property acquisition, when purchasing certain fixed assets or when entering into long-term agreements. The policy should include a provision to depreciate the Asset Retirement Cost (ARC), to accrete interest on the Asset Retirement Obligation (ARO), and to evaluate the retirement obligation based on new facts and circumstances that may cause a change to the original ARO. Additionally, the policy should prescribe financial statement reporting and disclosure, how the inflation factor will be derived and how the institution will determine its credit-adjusted risk-free rate.

2. Assess existing AROs for the current fiscal year. NOTE: the requirement for conditional asset retirement obligations is for fiscal years ending after December 15, 2005. Consider what assets may be affected by taking the following actions:
   a) Obtain a list of property, plant and equipment.
   b) Inquire with facilities management regarding possible asset retirement obligations that may be relevant for buildings and property.
   c) Inquire with program officers, equipment technicians or other persons knowledgeable about specialized equipment or assets that may trigger possible AROs.
   d) Obtain lease and other purchase agreements and review for possible AROs.
   e) Inquire with counsel or other personnel who are familiar with federal, state or local laws that may trigger possible AROs.

3. For each possible ARO, identify the legal obligation to perform an asset retirement activity. Quantify the obligation and the related asset by taking the following actions:
   a) Estimate the cost or cost scenarios for the AROs and substantiate your estimates with supportable assumptions. Use techniques similar to cash flow modelling.
      i. Labor costs based on prevailing wages.
      ii. Overhead charges for labor based on current applicable rates.
      iii. Estimated costs to assume risk or surcharges for hazardous materials (i.e., “hazmat”).
   b) Estimate the probability of the different cost scenarios.
   c) Estimate the timeliness and related probability of satisfying the ARO.
   d) Apply inflation adjustment based on estimated settlement.
   e) Apply present value based on credit-adjusted risk-free rate of return.

4. For the first year-end after December 15, 2005, evaluate and recognize the applicable cumulative depreciation for the ARC and the cumulative interest accretion of the ARO.

5. Because this is recognized as a change in accounting principle, compute the change on a pro forma basis and disclose the adjustment in the footnotes for the beginning of the earliest year presented and at the end of all years presented as if FIN 47 had been applied during all periods affected. NOTE: Most not-for-profit organizations present single year or comparative financial information only. As applicable, assess effect on bond covenants and other financial statement measures.

6. For subsequent years, depreciate the ARC and continue to accrete interest on the ARO, as well as re-evaluate the estimates used in the calculation for appropriateness.

7. Prepare a disclosure template for financial reporting.
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Endnotes

1 A helpful website for asbestos-related information is: http://www.epa.gov/region4/air/asbestos/inform.htm

2 Other examples would include research universities that have laboratories and instruments with mercury, lead, radioactive materials or chemicals that might be subject to unique disposal regulations. Underground storage tanks for fuel or kilns also might be examples of asset retirement obligations that are within the scope of the FASB’s pronouncement.