Subtitle C and D Corporate Financial Test Analysis
Issue Paper
Assessment of Trust Fund/Surety Combination

Introduction

This paper analyzes issues related to use of a trust fund as collateral for a surety bond. Commenters proposed that owners/operators be allowed to deposit funds equal to the present value of the closure/post-closure cost estimate in a trust fund, which therefore would not be fully paid up.[1] The trust fund in turn would serve as collateral for a surety bond for the amount of the cost estimate. At the time of closure the funds in the trust fund would be substituted for the bond.

This mechanism bears a superficial resemblance to a combination of mechanisms, which is currently allowed by the financial assurance regulations. That is, an owner/operator now could combine a trust fund, funded sufficiently to cover a portion of the closure and post-closure costs, with a surety bond large enough to cover the remaining portion of the costs. If the owner/operator subsequently built up the size of the trust fund, the owner/operator could, with EPA's permission, reduce the size of the surety bond by an equivalent amount. EPA would be the beneficiary of both the trust fund and the surety bond.

For this analysis, we have assumed that the potential mechanism would differ from the combination of trust and surety described above in the following ways:

- The surety bond would cover the full amount of the closure and post-closure care cost estimate, irrespective of the size of the trust fund;
- EPA would be the beneficiary of the surety bond, but the trust fund would be written so that its initial beneficiary would be the provider of the surety bond,

[1] A similar trust fund was initially proposed in 1978 by EPA for use by RCRA Subtitle C owners and operators. The initial financial assurance proposed rule required an owner/operator to establish a trust fund for the amount of the estimated cost of closure, and to deposit the cash in a trust fund. Interest accruing on the trust fund could be taken into account, however, in determining its initial value. The present value to be deposited was based on a real interest rate of 2.0 percent and on the estimated time period before closure. Financial assurance for post-closure care and monitoring could be provided by a trust fund that built up over the life of the facility or 20 years, whichever was shorter. 43 Federal Register 58986, December 18, 1978.

In 1980, following public notice and comment on the 1978 proposal, EPA proposed instead to allow the trust fund to build up over the expected life of the site or 20 years. EPA explained that commenters had opposed having the trust fully funded at inception, because they could not afford to comply with that requirement. EPA responded that it believed that depositing the full amount of the closure cost in the trust at the beginning "may cause insolvency in a few cases representing a relatively small percentage of capacity. However, not being willing to risk aggravating a possible capacity shortfall, EPA proposes to allow the closure trust fund to build up. . . . " 45 Federal Register 33261, May 19, 1980.

and EPA would become the beneficiary only after a triggering event, such as the commencement of closure and/or cancellation of the surety bond;

- The trust fund would initially be funded at the present value (the discounted equivalent) of the closure and post-closure cost estimate, calculated at an interest rate reflecting a reasonable estimate of the likely annual rate of return on the investments in the trust fund, irrespective of the usual collateral requirements of the provider of the surety bond; and

- The trust fund would earn a sufficient amount to enable it to cover the full costs of closure and post-closure care by the time it is substituted for the surety bond.

The analysis presented in this paper is organized in four sections:

- Section 1 evaluates each of these assumptions and discusses their implications for the likelihood that the mechanism could function as proposed;

- Section 2 evaluates the net costs of the proposed mechanism and compares them to the costs of other mechanisms;

- Section 3 discusses the cash flow impact of the proposed mechanism; and

- Section 4 evaluates the impact on the proposed mechanism of changes in the cost estimate over time.

The key findings of the analysis presented below are as follows:

- The net costs of the proposed mechanism would be higher than currently-authorized alternatives;

- The proposed mechanism would impose a heavy cash flow burden on the owner/operator; and

- The proposed mechanism would impose heavier burdens than other currently-authorized alternatives on the owner/operator if the cost estimate increased after the mechanism was set up.

1. Assumptions

This section explains the basis for the assumptions listed above.

Assumption 1: The surety bond will cover the full amount of the closure and post-closure care cost estimate, irrespective of the size of the trust fund. This assumption is required by the current regulatory requirements. Financial assurance must be provided for the full amount of the closure and post-closure care cost estimate. Because the trust fund would be devoted to providing collateral for the surety bond, it would not be payable to EPA and would not provide any financial assurance coverage. Therefore, the surety bond must be written for the full amount.

Assumption 2: EPA would be the beneficiary of the surety bond, but the trust fund would be written so that its initial beneficiary would be the provider of the surety bond until the commencement of closure, cancellation of the surety, or some other triggering event, and EPA would be the beneficiary thereafter. This assumption is required by the two uses to which the trust fund might be put. Initially, it must be payable to the surety company, because, as collateral, it may be used to repay the company for funds it expends under the surety. It must also, however, have the capacity to be used as a standby trust under EPA direction, if it is to provide the funds for closure and post-closure care. Trusts can be drafted that would satisfy these two conditions. The settlor of a trust (i.e., the owner/operator) can limit the initial beneficiary's interest to a definite period of time, or until the happening of a specified event, and can create contingent beneficiaries whose interests vest subject to certain conditions, such as the passing of a period of time or the happening of a specified event. Thus, a trust instrument could be drafted that made the surety company the initial beneficiary, but stipulates that the interest is contingent and can be voided to vest instead with EPA upon the cancellation of the surety. Because the initial purpose of the trust would be to serve as collateral for the surety bond, however, the surety company would certainly have a great deal of power over the terms of the trust and might want to place very stringent conditions in the trust involving the transfer of the beneficiary's interest from itself to EPA.

Assumption 3: The trust fund would initially be funded at the present value (the discounted equivalent) of the closure and post-closure cost estimate, calculated at a reasonable interest rate reflecting the expected annual rate of return on the trust's investments, irrespective of the usual collateral requirements of the provider of the surety bond. This method of determining the size of the collateral for the surety bond could be very controversial to surety companies. Sureties usually require collateral because (1) a small, financially weak company is seeking the bond, or (2) the bond exceeds a specified amount. In the first instance, collateral is usually required up to 100 percent of the face amount of the bond. In the second instance, usually multimillion dollar bonds, collateral of 50 percent or more of the face amount normally is sought. The surety company would have to be convinced that a trust fund, whose size was determined by the proposed method, would provide it with adequate collateral.

Assumption 4: The trust fund would earn a sufficient amount to enable it to cover the full costs of closure and post-closure care by the time it was substituted for the surety bond. EPA's financial assurance regulations do not rely upon investment income to build up a trust sufficient to pay closure and post-closure care costs. Instead, annual payments are required according to the following formula:

$$\text{Annual payment into the trust} = \frac{\text{Cost Estimate - Current Value of the Trust}}{\text{Number of Years Remaining Until Trust is Funded}}$$

or

$$P = \frac{CE - CV}{Y}$$

The proposal to use a partially-funded trust as collateral for a surety bond until the time that closure commences, and then to rely on the trust for funds, implies that no annual

payments will be made into the trust and that the trust income will cause it to grow to the necessary size. The commenters' suggestion that the trust fund should be funded at the present value necessary to yield funds equalling the closure cost estimate at the time closure must occur implies that an appropriate interest rate can be identified. However, research into the potential for the trust fund to grow over time has reached inconclusive results. EPA estimated in 1980 that the real rate of return on the trust fund would be zero percent, taking into account fees paid to the trustee, legal costs, inflation, and taxes, even though the trustee would be expected to invest the funds in the trust in a "prudent" manner.[2] Analysis subsequently performed by ICF in 1987 suggested that a 1.0 percent rate of return is reasonable.[3] Recent analysis, covering a longer period (1926 to 1994) than the 1987 study and using Treasury bonds as the trust investment suggests that about a 1.7 percent rate of return could be expected.[4] A higher rate of return might be expected from a less conservative investment strategy. However, as discussed below, even at an assumed 5 percent rate of return on the trust, a large trust would be required to be provided as collateral.

2. Net Costs of Proposed Mechanism Relative to Other Mechanisms

This section first describes the costs of surety bonds, including the impact of collateral on those costs, and then uses the costs to evaluate the costs of the proposed financial assurance mechanism. For these estimates, the cost of the trust is assumed to be constant throughout.

Surety Bond Costs

[2] 45 Federal Register 33261, May 19, 1980.

[3] "Choice of Rate of Return for Determining Financial Assurance Requirements in Perpetuity," Memorandum to Margaret Schneider, EPA, October 21, 1987, based on Ibbotson Associates, Stocks, Bonds, Bills, and Inflation 1987 Yearbook, "Inflation Adjusted Basic Series: Summary Statistics of Annual Returns," 1987.

[4] See Issue Paper 5 for a discussion of this and several other potential rates. An alternative measure of the net costs of a trust fund to an owner/operator is the interest rate differential. The cost of a trust fund can be described as the interest rate differential between the interest rate a firm can earn on funds invested in the trust, and the interest rate that the same firm pays when borrowing funds. Firms generally pay a higher rate of interest on funds borrowed than they earn on funds invested. If a firm borrows funds (to fund the trust or for working capital or other business needs), rather than using the funds deposited in the trust fund, then the cost of using the trust is equal to the interest rate differential multiplied by the amount of money held in the trust. In 1987, ICF calculated the interest rate differential for EPA, using the spread between the prime lending rate (assumed to be the rate firms would pay) and the Treasury bill rate (assumed to be the rate firms would earn). The interest rate differential ranged from a negative 2.8 to a negative 3.3 percent, with larger firms assumed to be able to borrow at or even below the prime rate and therefore to enjoy a smaller differential.

Contacts with representatives of the Surety Association of America and the National Association of Surety Bond Producers consistently provide information that surety bonds are generally priced at an annual premium between 1 percent and 5 percent of face value. The type of activity covered by the bond, the financial condition of the firm securing the bond, and other factors such as collateral can affect the cost.

According to the surety associations, some companies apply a sliding scale of rates. The following were typical rates in 1994 for bonds covering environmentally-related activities:

First $100,000	$25/$1,000
Next $400,000	$15/$1,000
Next $2 million	$10/$1,000
Next $2.5 million	$7.50/$1,000

Based on this price structure, a premium rate of 1.0 to 1.5 percent is likely for bonds up to $2.5 million.

Other firms price similar bonds on a straight 2.5 percent to 5.0 percent rate, based on the financial strength or weakness of the firm obtaining the bond and an assessment of the likelihood that payment will be required.

Collateral is commonly required for bonds written for small, financially weak companies and for bonds exceeding $1-2 million. The presence of collateral does not necessarily reduce the premium charged for the bond. If a firm provided collateral in a situation in which it would not otherwise be necessary, the premium rate for the bond would probably be reduced, but the extent of the reduction would be determined on a case-by-case basis.

A sample of surety bonds submitted to the Nuclear Regulatory Commission to provide financial assurance for decommissioning facilities belonging to nuclear materials licensees suggests that the premium rates discussed above are relevant for most firms, but that very large firms with relatively small bonds may be successful in obtaining lower rates. The sample contained 14 bonds, ranging from $2,000 to $750,000. Eight of the 14 premiums were between 1.0 percent and 3.7 percent, with the mode at 2.0 percent. Four large firms with the remaining six bonds, however, obtained premium rates of less than 1.0 percent, on bonds ranging up to $750,000.

In summary, an average premium rate of 1.5 percent appears to be a reasonable and potentially somewhat low estimate for a bond that is not collateralized. A premium rate reduction of 0.5 percent, which appears to be a relatively high estimate, has been assumed for a collateralized bond. The combined impact of these two rates is likely to somewhat overestimate the impact of collaterization.

Estimated Combined Costs of Surety Bond and Trust Compared to Other Mechanisms

The proposed mechanism is likely to be more costly than other mechanisms because the surety bond must cover the full amount of the cost estimate. There appears to be no way, under current law, to avoid this result. Therefore, any cost savings achieved in the premium

rate due to the use of collateral are likely to be overwhelmed by the additional premium that must be paid.

For example, if a $1 million cost estimate was covered by the proposed mechanism, and if the surety premium was reduced from 1.5 percent to 1.0 percent by the presence of collateral, the premium savings would equal $5,000 ($15,000 - $10,000). However, surety costs overall are sharply impacted the use of large amounts of collateral to achieve the premium rate reduction. This can be demonstrated by assuming that the amount required to be set aside as collateral instead is used in a combined mechanism to reduce the size of the surety bond that is required. If $800,000, which would be the amount that would have to be set aside in a trust fund as collateral at a discount rate of 1.7 percent, was otherwise used in a combined mechanism, as currently allowed by the regulations, to reduce the size of the surety bond required from $1,000,000 to $200,000, the difference in surety costs is $7,000 ($1 million @ .010 = $10,000; $200,000 @ .015 = $3,000). If collateral of $600,000, which would be the amount required to be set aside as collateral at a discount rate of 5.0 percent, was used to reduce the size of the surety bond, the difference in surety costs is still $3,000 ($1 million @ .010 = $10,000; $400,000 @ .015 = $7,000). Thus, a premium rate reduction of 0.5 percent through the use of collateral does not counteract the impact of requiring a larger surety bond.

This adverse cost impact can also be demonstrated by the following example. If a combination of trust fund and surety bond, as allowed by the current regulations, were used to provide financial assurance for a $1 million cost estimate with closure expected in ten years, a trust could be initially funded for $100,000 and a surety bond secured for the balance of $900,000. The surety cost would equal $13,500 in the first year ($900,000 x .015) and decline each year by approximately $1,500 as the trust is funded by an additional payment and the size of the surety is reduced by an equivalent amount. In contrast, the surety cost for the proposed mechanism would be $10,000 ($1,000,000 x .010) in the first year, but that amount would have to be paid every year for ten years, and the premium rate reduction would also have been achieved by funding the trust fund with substantially more than $100,000 in the first year.

3. Cash Flow Implications

As discussed under section 2, above, the cash flow required to fund a trust fund at the beginning of the period under the proposed mechanism will be substantially greater than the amount necessary to fund a trust according to the formula currently enacted under RCRA.

For a facility that is expected to be open for 10 years and with a cost estimate of $1,000,000, cash flow of appoximately $845,000 would be necessary to fund the trust at a 1.7 percent discount rate and cash flow of approximately $617,000 would be required at a 5.0 percent rate. In contrast, the annual payments required to fund a trust over the 10-year period, using the standard formula, would come to approximately $100,000 per year. (Assuming, in each case, that the value of the trust does not decline in any year as a result of investment losses.) The heavy up-front cost of a paid-up trust, which was the main argument presented against such trusts when they were initially proposed by EPA in 1978, is partially, but not substantially, alleviated by the proposed mechanism.

4. Effect of Changes in the Cost Estimate

Under the proposed mechanism, increases in the cost estimate would require the owner/operator to add additional funding to the trust fund at the same time that it increased the size of the surety bond. In contrast, for a trust fund with a pay-in period, such as the trust fund currently allowed under the regulations, the impact of an increase in the cost estimate that does not occur in the last year of the trust's existence is mitigated by the ability of the owner/operator to cover the additional amount over the remaining pay-in period rather than fully funding the additional amount immediately.

Any increases in the cost estimate occurring in the final year before closure would affect equally both the trust used as collateral for the surety bond and the trust that is funded over time, since both would have only one year remaining in which the full amount of the increase would have to be paid and the amount of the trust increased to equal the full amount of the cost estimate.