ESTIMATION OF MGP SITE INVESTIGATION AND REMEDIATION COSTS

CASE 11-M-0034

Proceeding on Motion of the Commission to Commence a Review and Evaluation of the Treatment of the State's Regulated Utilities ' Site Investigation and Remediation (SIR) Costs

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COST UNCERTAINTY

Summary

The considerable uncertainty in SIR cost estimates makes use of a cost cap or cost target problematic.

In developing this conclusion, I considered governmental and industry association documents to explain utility experience:

- Types of cost estimates
- Inherent uncertainty in cost estimates as recognized by
  - American Institute of Certified Public Accountants (AICPA)
  - US Environmental Protection Agency
  - ASTM International
- Poor track-record of commercial insurance “cost cap” policies

TYPES OF COST ESTIMATES

Cost estimates vary in scope depending upon their intended use:

- Financial Reporting
  - Consistent with FASB guidance
  - Updateable, generally annually
- Budgetary
  - Typically focus on known, near-term SIR requirements
  - Updatable as new information becomes available
- Valuation Analyses
  - Associated with liability transfers (M&A, insurance settlements)
  - Capture all reasonable liability outcomes
  - Typically not updated: Limited to the transaction

COST UNCERTAINTY

Cost uncertainty arises for the complex technical and regulatory environment driving SIR activities, including uncertainty with respect to:

- Nature and extent of site contamination
- Cleanup demands by NYDEC, property owners and other stakeholders
- Type of remedy that ultimately will be selected
- Bid prices vs. engineering estimates
- Scope of the actual remediation effort (e.g., quantities)
- Amount and timing of other PRP and insurance recoveries, if available

Compounding the total cost uncertainty is the uncertainty with respect to timing of expenditures

COST UNCERTAINTY

Uncertainty in SIR costs is widely recognized by governmental agency and industry associations:

- American Institute of Certified Public Accountants (AICPA)
  - Guidance for preparing financial statements
  - Establish “benchmarks” for cost recognition
- U.S. Environmental Protection Agency
  - Inclusion of contingencies
  - Range of uncertainty in estimates
- ASTM International
  - Uncertainty inherent in estimates
  - Estimates based on new information does not discredit prior estimates

COST UNCERTAINTY

AICPA

AICPA established guidelines for what cost elements should be included in SIR estimates:

- Participation as a PRP in the Remedial Investigation (RI) or Feasibility Study (FS) stage ... “is generally estimable within a reasonable range.”
- By completion of the Feasibility Study … “minimum of the remediation liability will be reasonably estimable.”
- By issuance of Record of Decision (ROD) … “estimate normally can be refined based on the specific preferred remedy.”
- From Remedial Design through Operation & Maintenance … “more precise estimates of total remediation cost … entity should continue to refine … its best estimate as this additional information becomes available.”

COST UNCERTAINTY

EPA

Contingencies are included to account *for "unknowns, unforeseen circumstances, or unanticipated conditions that are not possible to evaluate from the data on hand at the time the estimate is prepared."*

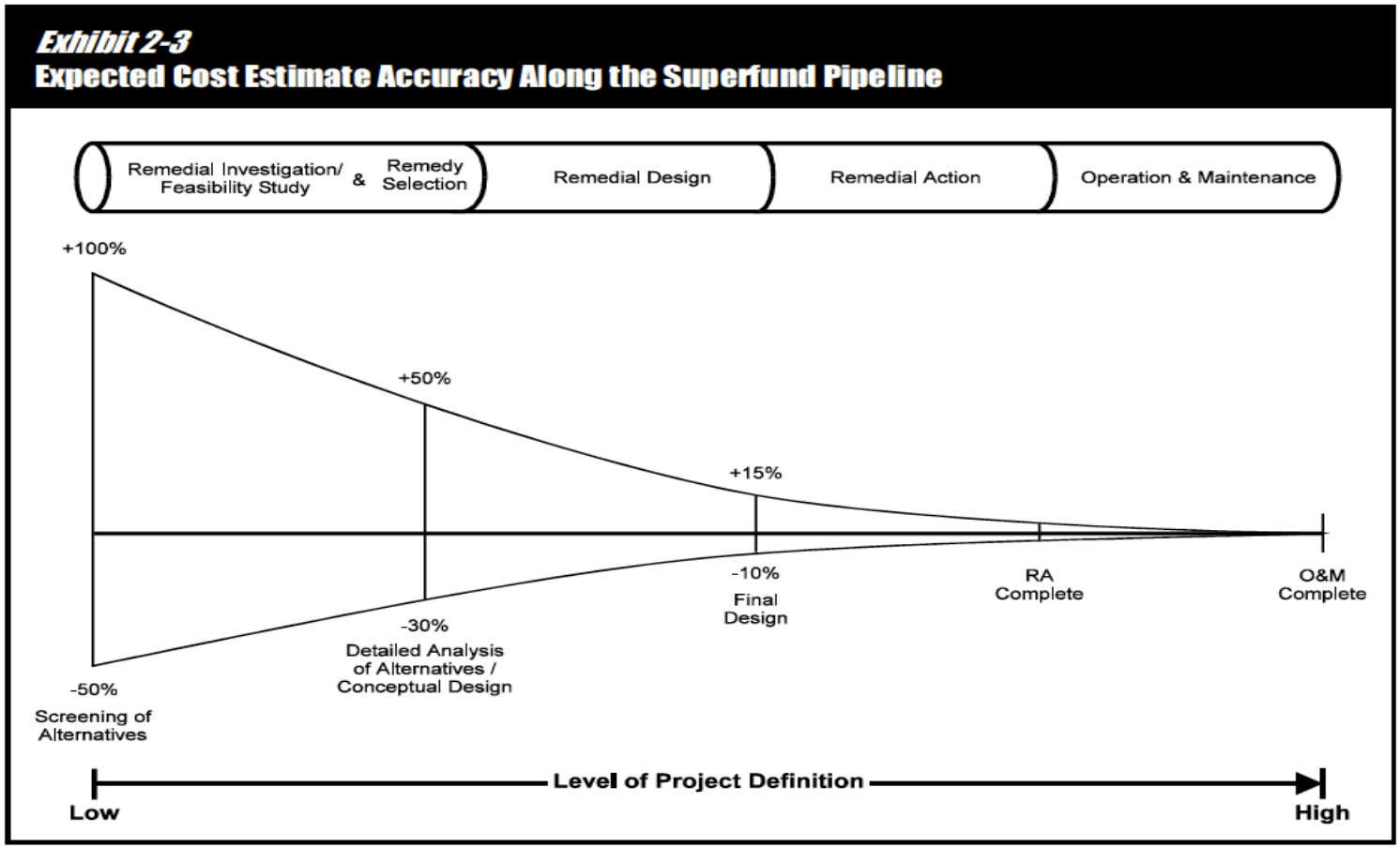
EPA recommends including two types of contingencies: Scope and Bid.

- Scope Contingency …. addresses "cost changes that might occur during the design."
- Bid Contingency …. addresses "unknown costs associated with constructing or implementing a given project scope."

COST UNCERTAINTY

EPA

Even with the inclusion of contingencies, EPA recognizes a wide range of expected accuracy for the estimates



COST UNCERTAINTY

EPA acknowledges that significant disparity can exist between cost estimates and actual outcomes:

- "Because of the many uncertainties in cost estimating, EPA officials told us (GAO) that **actual construction costs never equal** the cost estimated in the ROD (Record of Decision)."
- These estimates could vary by 100 percent from the actual costs of implementing a remedy.
  - As EPA's estimates become more refined during the Remedial Design phase, estimates that vary from actual costs by 100 percent are not common
  - Variation by 20 to 40 percent is common

ASTM International also established a standard for the estimation of SIR costs and the uncertainty surrounding the estimates and concluded that even when the standard is followed, "uncertainty is not eliminated."

Indeed ASTM 2137 explicitly deals with comparison to subsequent estimates, stating:

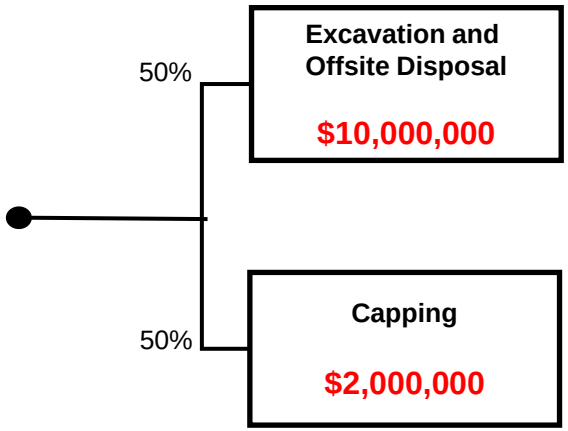
- *"Subsequent estimates based on additional information should not be construed as indicating the prior estimates of costs and liabilities for environmental matters were unreasonable at the time they were made."*
- *"Estimates should be evaluated on the reasonableness of analyses and judgments made at the time and under the circumstances in which they were made."*
- *"Subsequent improvements in estimates should be made as more information becomes available, but these improved estimates should not be considered valid standards on which to measure the reasonableness of a prior estimate…"*

ASTM 2137 sets forth a hierarchy, in terms of “robustness”, of the various methods used for cost estimation.

- The “most robust” is an actual bid for the work to be performed
- Followed by expected value (or decision tree) analysis
- Then, the “most likely value” and “range of values”
- Followed by “known minimum value”
- Finally, “no estimate”

The following figure illustrates a simple decision tree with two equally likely outcomes for a site remedy:

- The Expected Value is the probability weighted outcome of the various scenarios, including remote outcomes:



(0.5) * (10,000,000) = $5,000,000

(0.5) * (2,000,000) = $1,000,000

Σ = $6,000,000 = Expected Value

Range of outcomes = $2 to $10 million

While Expected Value is the most “robust” method of estimation (outside of an actual bid), there is still a wide range of potential cost outcomes.

COST UNCERTAINTY

MGP sites pose unique SIR challenges:

- Sites typically ceased active operation more than 50 years ago;
- May no longer be owned by the utility
- May have undergone significant site use changes in the intervening years
- Offsite environmental contamination may be as problematic as onsite contamination

Compounding site cleanup uncertainties, the timing uncertainty at multiple sites complicates multi-year budgeting efforts.

If costs are artificially capped, projects will be “spread out” leading to remediation inefficiencies and higher SIR costs.

- With a portfolio of sites, cash flow demands can vary markedly from year to year
- This will necessitate delaying or slowing of SIR activities to remain within the cap
- Opportunities to reduce costs by taking advantage of remediation cost sharing with real estate developers may be foregone
- Efforts to “smooth” the cash flow expenditure rate (once sites have entered the SIR process) will lead to additional mobilization/demobilization, equipment, oversight, and construction management costs
- Increased risk of litigation

INSURANCE INDUSTRY EXPERIENCE

Given the uncertainty of SIR costs, the insurance industry recognized an opportunity to sell remediation cost cap insurance, but the effort largely failed:

- Remediation cost cap policies became popular in the late 1990's.
- By 2000, the number and types of environmental insurance offered had increased dramatically.
- However, by 2004, Willis reported, "the environmental market is now exhibiting a form of hardening as challenges appear in underwriting terms and engineering requirements."
- Also in 2004, Willis noted that a major market player, Kemper, "struggled with financial challenges and put its environmental business into run-off."

INSURANCE INDUSTRY EXPERIENCE

- 2009 report observed “both primary insurers and reinsurers have begun to see some significant adverse claims trends …. they are reassessing how much capacity they are willing to commit.”
- Also from 2009, “given the relatively high loss ratio with respect to Cost Cap policies, premiums have increased … retention requirements have increased …. and co-insurance is typically required.”
- In summary,
  - The insurance industry aggressively promoted the coverage
  - There was demand for such coverage
  - The insurance industry couldn’t figure out how to set reasonable cost cap values
  - The product, as initially envisioned, has essentially disappeared.

CONCLUSION

There is widespread recognition that there is inherent uncertainty in remediation cost estimates:

- Utility and other industry experience
- Guidance of governmental and industry standard-setting institutions
- Experience of the insurance industry with cost cap policies

Given this uncertainty, there are significant risks to cost-effective remediation in setting caps and targets for rate making purposes.