



US Army Corps of Engineers
Water Resources Support Center
Institute for Water Resources

HAZARDOUS AND TOXIC WASTE (HTW) CONTRACTING PROBLEMS

A Study of the Contracting Problems
Related to Surety Bonding in
the HTW Cleanup Program

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HAZARDOUS AND TOXIC WASTE (HTW) CONTRACTING PROBLEMS

A Study of the Contracting Problems Related to Surety Bonding in the HTW Cleanup Program

Prepared by

U.S. Army Corps of Engineers
Water Resources Support Center
Institute for Water Resources
Casey Building
Fort Belvoir, Virginia 22060-5586

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I. SUMMARY

The EPA and the U.S. Army Corps of Engineers ("Corps") have experienced difficulties in contracting Hazardous and Toxic Waste (HTW) cleanup projects. The HTW cleanup industry has expressed concern that it could not obtain surety bonds required as a prerequisite for competing for remedial action construction projects. It was reported that Treasury Department listed corporate sureties, which provide the guarantee bonds for Government projects, had imposed stringent limitations on the provision of performance bonds which assure the government that the cleanup project will be completed. Essentially, the bonds guarantee that the surety will either complete performance or pay the Government its costs associated with completing the project to the limit of the penal amount of the bond. Various contracting industry firms stated that they have not been able to secure bonding for some projects. Those that have obtained bonds had a difficult time doing so, and some firms that had obtained bonds for previous projects were unable to obtain bonds for a subsequent project. The surety industry indicated its reluctance to guarantee performance on HTW projects primarily because of its concern for possible long-term liability exposure and changing state-of-the-art design requirements associated with such actions.

The EPA and the Corps commissioned the Institute for Water Resources to gather information on the subject; to analyze the data to determine the extent of the existing bonding problems; and to offer recommendations which could be implemented in an effort to alleviate problems noted. A survey was conducted of Corps district offices, the HTW cleanup industry, surety firms, and trade associations, to determine the extent and nature of the problem. A few survey activities extended to EPA and state offices involved in HTW work.

The study examined 24 ongoing remedial action and completed Corps HTW construction contracts. Statistics were gathered from actual Corps records on the contractors and sureties that participated in these contracts. In addition, a sample of the universe of HTW contractors and sureties was interviewed along with industry association representatives. The responses to these interviews appear later in this paper. They were analyzed to arrive at conclusions concerning industry views and perceptions of the surety problem.

The interviews elicited the perceptions of the HTW surety and contracting community regarding their concerns about risks in the HTW Cleanup program. Many of these concerns are of potential risks that are hypothesized, but have not yet occurred. However, these risks are perceived and acted upon as real.

The study findings, which centered on Corps executed projects, indicate that the surety industry is making performance bonds available to certain of the major firms competing for HTW work. However, it appears that industry's reluctance over the potential liability associated with such work has prompted the industry to move toward limiting bonding to firms having other substantial business with the surety, or major financial assets available, and a history of past performance on HTW projects. This surety industry reticence has precluded some firms from being able to secure needed bonding and has also lessened the opportunity for firms wishing to break into the Federal HTW marketplace. The resulting concern of both EPA and the Corps is that bonding availability not curtail qualified firms' ability to compete for HTW projects to such an extent that the prices for the remedial action work is arbitrarily and excessively increased.

There is no single solution to remedy the problems encountered in the study. Rather, there are a number of individual actions that may be instituted, some at a fairly low institutional cost that will help to alleviate the situation. The government should mitigate the concerns of the contractors and the sureties while maintaining appropriate protection of the government's interests.

The solutions to the cited problems in HTW bonding include the following:

- Requirement for zero based acquisition planning involving an interdisciplinary team to develop plans that incorporate techniques such as risk analysis in structuring the project contracting plan. Analysis will include consideration of the extent of risks assumed by the government will effect potential project cost savings, increased competition for contracts and opportunities for more firms to compete in the HTW program. Policy guidance

will be issued on the appropriate factors to be taken into consideration in accomplishing this analysis.

Analysis of the option of dividing the project into work elements with an appropriate level of bonding in each.

- Clarify the government's policy on indemnification of contractors and sureties.

- To the extent of its authority, each government agency will define its specific responsibility for the risk aspect of the cleanup project where appropriate (e.g. accept responsibility for performance specifications).

- The government will specifically accept the responsibility for project design where the performance specifications have been met.

The thrust of this study was specifically centered on the bonding issue. While the stated problem of many of the respondents was bonding, the underlying issue is the uncertainty about risk in general as it applies to the HTW Cleanup program. There is uncertainty by sureties and contractors concerning risk and liability. Surety bonds for performance, liability insurance and indemnification questions are closely related and difficult to separate when dealing with HTW risk questions.

There are two categories of options available to address these solutions. First, short term steps can be taken internally by the Corps and EPA that involve revising internal agency procedures to alleviate the contracting problem. Changes to government-wide construction procurement regulations, e.g. standard bond forms, should be pursued with the FAR Council. Finally, longer term actions could be carried out which concentrate on potential legislative revisions to the liability and indemnification provisions in the superfund statute.

II. BACKGROUND

A. BONDING PROBLEMS

Performance bonds are used in the construction industry to insure the completion of construction projects. These bonds are mandated by the Miller Act for all Federal construction projects. While bonds are normally required only for construction contracts; in some instances, concern for assuring performance has led to the industry being required to guarantee performance on work elements that are characterized primarily as service rather than construction. In general, a 100% performance bond has been required by the Corps on construction contracts.

The Corps, EPA, and the states have been told by sureties and HTW contracting firms about the inability of contractors to obtain performance bonding for HTW cleanup projects. Bond availability problems and contractor concerns have increased over the past year. In some instances firms responding to Government HTW contract announcements have not been able to secure performance bonds. Some firms have also reported that they will not compete for HTW construction contracts because they know that they cannot obtain the required surety bonds.

While the inability to secure bonding may occur in other types of construction contracting and is not exclusive to the HTW field, the frequency of non-bonding occurrences and the fact that they involve companies that are of a size and financial stature not normally concerned about such matters, is itself a cause for concern. Even more disconcerting is the fact that firms which are most experienced in accomplishing HTW work are in some instances being precluded from competing for such work by their inability to secure the required bonds.

B. STUDY GOAL: DETERMINE EXTENT OF THE BONDING PROBLEM AND PROPOSE SOLUTIONS

EPA's Office of Emergency and Remedial Response and the Corps Directorate of Military Programs, Environmental Restoration Division, commissioned a study to determine the extent of the bonding problem and identify action which could be taken to alleviate bonding problems noted. The Institute for Water

Resources (IWR), a Corps research agency located at Fort Belvoir, VA, was selected to do the study. The study was initiated in late November 1989. IWR conducted a series of personal and telephone interviews of HTW industry contractors, as well as HTW industry associations. In addition, personnel from insurance and surety industry firms, surety associations, states, EPA, and the Corps were interviewed about the issue. A listing of the interviewees appears in Appendix A.

The interviewees were questioned regarding difficulties experienced in the HTW bonding area. They were also asked for their views on the nature and magnitude of any bonding problems and requested to provide suggestions on actions that could be taken to rectify the situation. IWR also gathered references, such as seminar papers, letters of concern to various agencies, testimony before Congress, government forms and regulations, and other relevant documents. A body of background material concerning the problem was assembled. The study also collected information concerning contracting for HTW cleanup, in particular information regarding the difficulties in the acquisition of surety bonds by contractors.

III. PROBLEM DEFINITION

When surety bonding problems are added to the hurdles that firms must face when competing for multi-million dollar projects, the number of firms meeting all the construction contract requirements could be reduced even further. This study attempts to determine the impact of performance bond availability on the successful accomplishment of HTW projects. The survey of surety bonding in the HTW program entails the examination of various institutional and procedural factors involved in Superfund and related HTW cleanup contracting programs. While there was general consensus that the potential liability and uncertainty surrounding such liability was the root cause for the limited bonding available, it is not clear that this was the only factor affecting availability. The surety industry's willingness to provide bonding was also linked to its independent evaluation of a number of factors relating to an individual contractor's financial and performance history. Construction firms were not asked why they may not have bid for or obtained contracts. Since proprietary information concerning the financial status of companies is not readily available and companies were queried only about the problems they had in obtaining surety bonds in the survey, and not about their financial status, the study was not able to establish that the liability issue was the only reason for sureties refusal to bond.

A. APPLICABLE LAWS, REGULATIONS AND OTHER FACTORS

There are several laws and regulations that affect contract cleanup activity in the HTW area. They are listed in the following table:

Table 1

STATUTES AND REGULATIONS PERTAINING TO HTW CONTRACTING

| <u>ACT</u> | <u>DESCRIPTION</u> |
|--|--|
| Miller Act Construction Contract Bonding Requirement | Requires Federal agencies awarding construction contracts to utilize payment bonds to assure that the prime contractor pays his subcontractors and performance bonds to guarantee completion of work in accordance with the contract specifications. |
| McNamara-O'Hara Service Contract Act (SCA) | Defines the types of activity classified as service contracts for the purposes of Federal government procurement. |
| Davis-Bacon Act (DBA) | Applies to all Federally funded construction projects. Designates the Secretary of Labor as the sole authority on the classification of wage rates for construction projects. |
| Comprehensive Environmental Res- ponse, Compensation and Liability Act (CERCLA), as amen- ded by Superfund Amendments & Reauthorization Act (SARA) | CERCLA enacted to eliminate past contamination caused by hazardous substances pollutants or contaminants released into the environment. Authorizes EPA to recover cleanup costs. SARA enacted to strengthen CERCLA and tighten cleanup target dates. Requires use Davis-Bacon wage rates for construction projects funded under section 9604(G) of CERCLA. |
| Federal Acquisition Regulation (FAR) | Pursuant to the requirements of Public Law 93-400 as amended by Public Law 96-83: provides uniform policies and procedures for contracting by Federal executive agencies. |

The procedure for obtaining performance and payment bonds from individual or corporate sureties for HTW cleanup contracts is incomplete without examining the background of the bonding requirement. The 1935 Miller Act specified that all construction contracts by the Federal Government would be covered by performance and payment bonds. The purpose of the performance bond is to insure that the project is completed in the event that the original contractor defaults.

The requirement for performance bonds varies with each project and is affected by the type of project being undertaken. A bond is required by the Miller Act on all fixed-price construction contracts over \$25,000, but must be

justified for service contracts. HTW cleanup projects may contain activities classified as either construction or service. According to CERCLA Section 9604, these classifications are governed by decisions issued by the Department of Labor (DOL). These decisions will control the wage rates applicable to the particular activities; that is Davis-Bacon for construction activities and Service Contract Act for service activities. In many cases, it is impossible to create an HTW contract comprised totally of construction or non-construction activities. Therefore most HTW contracts are made up of a combination of these activities. Where construction and service activities are combined in the same contract, the procuring agency generally will treat the contract as being under either a service or construction contract based on the classification of the predominant work. A recent letter (31 May 90) from DOL to McLong, advises that construction Davis Bacon Wage Rates must be included if there is a "substantial" amount of construction work involved. Contracting officers have varied in their decisions on bonding requirements for contracts involving both classifications of work. In some instances, performance bond requirements were applied only to the extent of the value of the construction work; in others the requirement was applied to the total value of the construction and closely associated service work. In these latter cases, the decision was usually criticized by contractors unable to secure bonding as being unduly restrictive of competition and unnecessary to protect the Government's performance interests. Moreover, where the CO determines that the contract is principally service related, he may treat the contract as a service contract and require no bonding.

The Contracting Officer (CO) is responsible for the initial determination of whether a contract should be service or construction based on the CO's understanding of the applicable rulings issued by the DOL. On occasions, DOL has overturned a CO's decision and has caused the Government additional expense by requiring the CO to include Davis-Bacon Wage Rates and, at times, paying additional wages retroactively. The Corps experienced one instance where a service contract classification associated with excavation of HTW contaminated soil was reversed by DOL to a construction classification following contract completion. This decision resulted in a significant contract price increase in order to provide an equitable adjustment to the contractor for the higher wage rate payments that had to be made to workers on

the project. The Corps of Engineers is very sensitive to avoiding disputes with DOL arising from failure to use construction wage rates. EPA is equally concerned that the proper rate be used by the Corps.

1. Miller Act Construction Contract Bonding Requirements. In order to fully address the performance bonding requirement and its relationship to the contracting industry, we must first examine the Miller Act. The Miller Act requires performance and payment bonds for any contract over \$25,000 for the "construction, alteration or repair of any public building or public work". P&P bonds are required on all FFP construction contracts and/or delivery orders over \$25,000. The percentage needed for performance bonds is flexible. However, these bonds are not necessary for cost reimbursement contracts and/or delivery orders. The level of bonding required is determined by the Contracting Officer based on the level of risk associated with the project and the resulting need to protect the Government's interest. The performance bond guarantees the Government that the building or work will be completed in accordance with the terms and conditions of the contract or the Government will be compensated. The payment bond guarantees that subcontractors and suppliers of the prime contractor will be paid for their work. Performance and payment bonds are usually issued by the same surety for a particular project. These bonds protect against contractor non-performance. They are not intended as insurance for contractor actions which may prompt third party liability suits, or as a substitute for pollution or any other type of insurance. A third bond, generally required by agency or acquisition regulations where the contract solicitation is a formally advertised sealed bid, is the bid bond. The bid bond protects the Government by providing a penal amount that will be forfeited by the surety of the lowest responsible bidder if the bidder fails to accept the award or to provide the required performance and payment bonds after award has been made. Bid bonds generally are provided by the same surety that provides the performance and payment bonds for a particular contract. The surety's decision to issue the bonds appears to be controlled by the contractors bonding capacity and its analysis of the risk associated with each particular contract. Hence, it would seem that difficulties reported in contractors' ability to acquire bid bonds are in fact directly connected to the same factors causing those contractors inability to acquire performance bonds.

Acceptable surety may be provided from a number of other sources in addition to the more familiar corporate and individual surety bonds. These other sources are listed in the Federal Acquisition Regulation (FAR) as including "United States bonds or notes",..." certified or cashier's check, bank drafts, Post Office money order, or currency".¹ Corporate surety bonds are provided by surety firms that have been approved by the Treasury Department. These firms cannot provide bonding beyond certain dollar limits established by the Treasury. Individual surety providers are, as the name implies, individuals who pledge their personal assets as guarantee. The corporate bond is the primary guarantee utilized in performance and payment bonding of both HTW and non-HTW work.

Over the past two years, interest in the use of individual sureties increased sharply as contractors anxious to compete for all Federal construction projects, but unable to acquire a corporate surety bonding commitment, sought to satisfy the Government's bonding requirements from the only source available. Reports suggest these bonds were made available at significantly higher cost. Unfortunately, the individual surety's assets available to secure the bond obligation all too frequently were insufficient in value to cover the penal amount of the bonds. In each instance where the contractor proposing the individual surety was disqualified, due to the non-responsibility of its proposed individual surety, the CO made an award to the next higher bidder which in every case provided a corporate surety bond. New regulations instituted in February 1990 place more stringent requirements on the use of individual surety bonds.

2. The Service Contract Act. The McNamara-O'Hara Service Contract Act (41 USC 351-358) (SCA) covers all Federal government service contracts exceeding \$2,500, whose principal purpose is the furnishing of services to the Federal government through the use of service employees. Since the term "service" is not as explicitly defined within the SCA as the term "construction" is in the Davis-Bacon Act (DBA), the DOL's implementing regulations (29 CFR Part 4) are keyed to the terms "service employees" and "principal purpose."

Inasmuch as the scope of possible service contracts is extensive, section 7 of the Act lists specific contracts outside the Act. Included among these exemptions are contracts for "construction, alteration and/or repair, including painting, or decorating of public buildings or public works." While DOL's regulations (29 CFR 4.130) contain a number of illustrative service contracts, none of those listed relate specifically to environmental restoration (HTW) projects.

The principal purpose emphasis is key inasmuch as a contract may be principally for services, but may at the same time involve more than incidental construction.

Existing DOL regulations do not define incidental construction. Guidance on this issue, however, may be derived from advisory memoranda issued by the DOL's wage and hour administration relating to construction projects comprised of different categories or schedules (building, heavy, highway and residential). As a general rule, DOL advises contracting officers to incorporate a separate schedule when such work is more than incidental to the overall or predominant schedule. "Incidental" is here defined as less than 20% of the overall project cost. DOL notes that 20% is a rough guide, inasmuch as items of work of a different category may be sufficiently substantial to warrant separate schedules even though these items of work do not specifically amount to 20% of the total project cost. This same rationale may apply to contracts involving services and construction.

Under such circumstances, both the SCA and the Davis-Bacon Act (see below) may apply. In this regard FAR 22.402(b)(1) prescribes that the DBA will apply when:

- a. The construction is to be performed on a public building or work.
- b. The contract contains specific requirements for a substantial amount of construction work exceeding the monetary threshold for application of the DBA. The term substantial defines the type and quantity of the construction work and not merely the total value of the construction work as compared with the total contract value.

c. The construction work is physically or functionally separate and is capable of being performed on a segregated basis from the other work required by the contract.

3. Davis-Bacon Act. The Davis-Bacon Act (40 USC 276) (DBA) covers all Federally funded or Federally assisted contracts in excess of \$2,000 for "construction, alteration or repair of public buildings or public works."² The Secretary of Labor's authority to rule on questions of statutory coverage under DBA is derived from Reorganization Plan No. 14 of 1950 (5 USC App. USC p. 1050 (1982)).

a. Applicability determinations issued by the Secretary's designate, the Administrator of the Wage and Hour Division, is binding rather than advisory in nature. Thus, when the DOL decides that the contracting agency made an erroneous determination not to incorporate the DBA provisions in a covered contract, the agency must either modify the contract to incorporate the required wage decision and provisions or terminate the contract (29 CFR 1.6).

In their determinations of DBA applicability relating to HTW work, the DOL relies on the regulatory definitions set forth at 29 CFR, Part 5. Thus, the statutory terms "construction, alteration or repair" refer to: "... all types of work done on a particular building or work at the site thereof, including without limitation, altering, remodeling, installation (if appropriate) on the site of the work of items fabricated off-site, painting and decorating, the transporting of materials and supplies to or from the building or work and hauling soil to an incinerator by the employees of the construction contractor or subcontractor...." DOL has defined "Building" or "Work" as follows: "... construction activity as distinguished from manufacturing, furnishing of materials, or services and maintenance work. The terms include without limitation, buildings, structures and improvements of all types, such as... excavating, clearing and landscaping." DOL, in its review of one environmental restoration project, has indicated that the term "landscaping" includes activities such as planting trees, lawns and shrubs in conjunction with other work, but also elaborate landscaping activities such as substantial earth moving and/or rearrangement of the terrain. DOL advised further that

these activities standing alone may be properly characterized as construction, alteration or repair of a public work.

Section 9604(G) of CERCLA also specifically stipulates the wage rates to be paid on Response Action Construction projects are to be as determined by the Secretary of Labor in accordance with the Davis-Bacon Act as follows:

"Sect. 9604(g)(1) All laborers and mechanics employed by contractors or subcontractors in the performance of construction, repair, or alteration work funded in whole or in part under this section shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. The President shall not approve any such funding without first obtaining adequate assurance that required labor standards will be maintained upon the construction work.

(2)The Secretary of Labor shall have, with respect to the labor standards specified in paragraph (1), the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 64 Stat. 1267) and section 276c of title 40 of the United States Code."

b. The essential point of the foregoing discussion of the Service Contract and Davis-Bacon Acts is that although the public policy objective (labor standard protection) of the statutes are similar, there are significant differences between the two which affect the cost of doing business. Clearly, the DOL's authority to require contracting agencies to retroactively modify contracts to add one set of wage rate provisions and/or delete another, will have consequences for project costs. In view of DOL's authority to issue determinations as to what comprises "construction" for purposes of the DBA, there may also be consequences for the coverage and extent of the bonds required under the Miller Act.

4. Superfund Statute. Inasmuch as considerable concern was expressed by the surety industry regarding its potential for liability arising from bonding of HTW projects, a brief discussion of the superfund statute is included in this section. The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (P.L. 96-510)(CERCLA), commonly referred to as the Superfund law, authorized \$1.6 billion to clean up abandoned dump sites. The

law was enacted to eliminate the contamination created by the indiscriminate disposal of organic and inorganic chemicals and other pollutants. The Act also allows EPA to force potentially responsible parties (PRPs) to perform the remediation or recover cleanup costs from the PRPs.

SARA (Superfund Amendments and Reauthorization Act of 1986) (P.L. 99-499) was enacted to re-authorize and strengthen the CERCLA. It was perceived at the time that cleanup activity was not proceeding quickly enough. SARA, therefore, set targets for beginning cleanup work. EPA was required to begin cleanup activities at 175 sites by October 1989 and an additional 200 sites by October 1991. CERCLA, as amended by SARA, specifies the basic guidelines for Superfund liability. Strict and joint and several liability are the foundations of both the 1980 and the 1986 Acts. These liability concepts are a powerful tool that can be used by the government to promote voluntary PRP response actions and to recover cleanup costs from any party found as having contributed to the contamination.

Strict liability is liability without fault. Thus, even if the firm is not negligent, the firm may be liable. The basis of joint and several liability involves the concept that, even if the firm is only responsible for a portion of the contamination, the firm may be held liable for all costs expended in the cleanup effort.

Recognizing that the strict and joint and several liability standard of CERCLA might prove onerous to remedial action contractors that are needed for cleanup efforts, Congress specifically excluded response action contractors from liability under Federal laws except for cases involving negligence. Gross negligence or willful wrongdoing are not covered. Furthermore, in section 119 of SARA, Congress authorized indemnification for remedial action contractor negligent liability associated with releases of hazardous substances. Indemnification for strict liability where it exists at state level is not authorized. There is no specific reference in either CERCLA or SARA on the availability of Section 119 indemnification to surety guarantors on Superfund projects. However, EPA has, at least in one instance, indicated that it would make indemnification available to a surety following a

performance default on the same basis as such indemnification would be offered to any remedial action contractor provided the surety assumes substantially the same role as the original contractor. Some corporate sureties point to this liability potential as the basis for their refusal or reluctance to actively provide bonding for HTW work. These sureties urge that it be made clear that the surety performance bond is a guarantee of performance only and in no way is intended to serve as insurance for potential third party liability suits. Likewise, they urge that the application of the Section 119 indemnification to the corporate surety involved in a HTW project be clarified.

5. Federal Acquisition Regulation. HTW contracts, like other Federal government procurement procedures, are controlled by the Federal Acquisition Regulation (FAR). The Federal Acquisition Regulation provides uniform policies and procedures for all Federal executive agencies. These policies and procedures define construction and other government procurement activities. In addition, they specifically define contracting instruments such as performance and payment bonds (see Appendix B). The development of the FAR is in accordance with the requirements of the Office of Federal Procurement Policy Act of 1974 (Pub. L. 93-400) as amended by Pub. L. 96-83 and OFPP Policy Letter 85-1, Federal Acquisition Regulation System, dated August 18, 1985. The FAR is prepared, issued, and maintained, and the FAR system is prescribed jointly by the Secretary of Defense, the Administrator of General Services Administration (GSA) and the Administrator of the National Aeronautics and Space Administration (NASA). These agency heads rely on the coordinated action of two councils, the Defense Acquisition Regulatory Council (DAR Council) and the Civilian Agency Acquisition Council (CAA Council) to perform this function. Agency heads are authorized to independently issue agency acquisition regulations provided such regulations implement or supplement the FAR.

By definition, the term "acquisition" refers to acquiring by contract with appropriated funds supplies or services (including construction) by and for the use of the Federal government through purchase or lease -- whether the services or supplies are already in existence or must be created or developed, demonstrated, and evaluated. Acquisition begins at the point when agency

needs are established, and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contract financing, contract performance, contract administration, and those technical and management functions directly related to the process of fulfilling agency needs by contract.

B. HAZARDOUS AND TOXIC WASTE (HTW) CONTRACTING PRACTICES

The Corps contracts with industry for construction and other services, e.g., architect-engineer services, research and development services, and supplies.

The decision on whether to use a firm fixed price (FFP) contract, cost plus award fee (CPAF), cost plus fixed fee (CPFF), or a combination of fixed price and cost depends on whether complete specifications can be provided in the solicitation. Other factors determining the decision are the size of the project, incremental funding, urgency, and the type of design required for implementation.

Prior to issuing a delivery order against an indefinite delivery type, umbrella contract (Pre-Placed Remedial Action (PPRA) or Rapid Response (RR)) or requesting a proposal from a contractor, a written determination must be made describing the type of project (service, construction, or both) and the type of delivery order to be issued (FFP, CPAF, CPFF, or mixed).

C. CORPS HTW PROJECT DATA PRESENTATION, ANALYSIS AND FINDINGS

1. Introduction. The study analyzed data relative to the Corps HTW contracting experience for Superfund projects. The prime offices responsible for HTW contracting within the Corps are the Omaha and Kansas City Districts. Contracting records from these districts for the years 1987 through 1990 were assembled and examined. The Tables and Charts on the following pages summarize information on the 24 Superfund contracts carried out in the 1987-89 time period. A summary of the charts is shown below.

| Bid Information | Bid Open Date | Project Size | Project Date |
|--------------------------------|---------------|--------------|--------------|
| Award Amount/ Gov. Estimate | 1A | 1B | 1C |
| High Bid/ Low Bid | 2A | 2B | 2C |
| Number of Bids | 3A | 3B | 3C |

2. Analysis and Findings.

a. Ratio of Award Price to Government Estimate. Chart 1A illustrates the trend in the ratio of award price to the government estimate over the study period from 1987 to 1989. The ratio of award amount to government estimate rose from .8 to 1.2. In addition, the ratio of award amount to government estimate tended to increase with the size of the project, as shown in chart 1B. The type of remedy that was utilized also affected the award/estimate ratio. Award ratios of 1.3 were observed for the waste containment projects, on the average, as opposed to .85 on the other extreme for alternative water supply projects as displayed in chart 1C. The remainder of the projects were around the 1.0 area. The conclusion drawn from this information is that there is a tendency for large projects to run at a higher ratio of award/estimate and through time. This tends to lend credence to the fact that there is a tight market for HTW contracts.

b. High to Low Bid Ratio. An analysis of the contract data indicated that out of the 24 projects four contracts involved situations where the initial bid winner was not awarded the bid due to inability to secure bonding. These four contracts totaled about \$31 million. \$3.9 million additional costs were incurred because of the necessity to utilize the next lowest bidder. This was an average of a 14% increase in costs for the four contracts. The ratio of high bids to low bids has been found to drop from around 2 to 1 in 1987 to 1.3 to 1 in 1989 as illustrated in chart 2A. The range of bids also tends to decrease with the size of the project. Chart 2B shows this tendency. The high-low bid ratio also varies by the type of project. The collection and disposal of waste products has a large variation in the ratio of the bids

while the waste containment, innovative technology projects and alternative water supply products have high-low bid ratios of around 1.2. This information also would support the case for less competition in the bidding for HTW projects through time.

c. Bidding Competition Climate. To determine if the bonding issues had contributed to any reduction in the competition for HTW projects, the bids for the 24 projects conducted by the Corps in the 1987 through 1989 period were examined. The number of bids was reduced from 6.2 on the average in early 1987 to 4.6 in late 1989 as shown in chart 3A. The number of bids also tended to lessen somewhat as the size of the project increased. This is illustrated in chart 3B. The latter phenomena is also experienced on all large construction projects. Chart 3C shows that the type of project also influences the number of bids received. Waste containment projects received the most bids--seven on the average--followed by alternative water supply and soil and waste water treatment projects. The least number of bids was received by the innovative technology projects. These projects received an average of only two bids. The data does not support a finding of significant cause and effect of bonding problems on the bidding for cleanup projects, but it does indicate a trend toward fewer bids for HTW projects.

The state lead EPA HTW projects have experienced similar problems in performance bonding as the Corps districts. The Texas Water Commission issued a second invitation for bids on a project due to limited competition and excessively high bids. The first attempt was unsuccessful due to the inability of four of the five contractors to obtain bonds and the final bid being excessively high. The EPA recommended contractual changes in the second attempt, and these changes resulted in a successful outcome with a contract being awarded at a substantial reduction in contract price. The changes recommended by EPA were as follows:

Allowing the use of an irrevocable letter of credit or a conventional bond in lieu of a performance bond.

Reduction in the security amount of the performance bond.

Deletion of the handling of hazardous material in the first phase of the project and shifting it to the second phase and deletion of a test burn of contaminated soil, thus removing the sureties' objections to bonding the first phase.

The writing of separate bond agreements for the two project phases and the precise definition of what liability is covered by the performance bond and the time limits of liability.

Reducing the dollar cap on the retainage for the last phase of the project from \$6 million to \$2 million and reducing the time the retainage is held from 60 to 18 months.

Giving the surety the right to choose the option of whether to complete the project or forfeit the bond if the contractor defaults on the performance bond.

Providing the requirements for the surety to obtain indemnification in case of contractor default and the surety assuming project completion.

d. Distribution of HTW Contracts. There is considerable variation in the distribution of contracts among HTW contractors. In the Kansas City District, about 400 firms are on the bidders' mailing list for all construction, including HTW contracts. In 1987 through January 1990, 24 contractors competed in the HTW program, and 14 received contracts. According to Corps District personnel, the same few companies continually appear in the final bidders' lists for HTW contracts.

Charts 5 and 6 list the contractors that have worked on Corps HTW construction projects and their market share of the total competed Corps HTW outlay or activity. Five contractors, individually or in partnerships, have received 78% of the HTW contract dollars (Chart 5). Five of the 14 firms obtained about 58% of all the projects (Chart 6). The firms receiving awards are, for the most part, large firms with experience in waste handling in general. They are not the only firms with the qualifications and credentials to do the work, nor are they the only firms that have expressed interest in the hazardous and toxic waste projects. There are many contractors interested in participating in these projects. There appears to be legitimate concern that contracting impediments, such as bonding, might lessen further the Government's ability to expand contractor participation. Contracting impediments must be carefully considered as to their relative significance.

TABLE 2A
CORPS HTW CONTRACTS
HIGH BIDS COMPARED WITH LOW BIDS

\$1,000,000s

| BID DATE | ST | PROJECT NAME | REMEDY TYPE | TYPE CONTRACT | HIGH BID | LOW BID | HI LOW | BID/ BID |
|-------------|----|-------------------------------|----------------|------------------|-------------|------------|-----------|-------------|
| 6/04/87 | PA | Lackawanna Refuse | CA | IFB | 40.0 | 15.9 | 2.5 | |
| 3/23/88 | MA | Nyanza Chemical Waste Dump | CA | IFB | 14.5 | 8.3 | 1.7 | |
| 5/17/88 | MA | Charles George Landfill | CA | IFB | 23.3 | 13.8 | 1.7 | |
| 6/07/88 | NJ | Lang Property | CD | IFB | 4.7 | 2.7 | 1.7 | |
| 6/07/88 | NJ | Metaltec Aerosystems | CD | IFB | 7.5 | 2.4 | 3.1 | |
| 8/02/88 | OH | New Lyme Landfill | CA | IFB | 18.5 | 13.7 | 1.4 | |
| 10/06/88 | PA | Bruin Lagoon | CA | IFB | 9.4 | 4.0 | 2.4 | |
| 10/12/88 | PA | Heleva Landfill | CA | IFB | 7.8 | 5.0 | 1.6 | |
| 10/18/88 | IN | Lake Sandy Jo | CD | IFB | 3.9 | 2.4 | 1.6 | |
| 11/16/88 | NJ | Bog Creek Farm | TW | RFP | 14.4 | 13.9 | 1.0 | |
| 12/06/88 | CA | Del Norte Pesticide Storage | TW | IFB | 2.0 | 1.2 | 1.7 | |
| 2/02/89 | NJ | Bridgeport Rental/Oil Svcs. | TW | IFB | 85.0 | 52.5 | 1.6 | |
| 3/28/89 | NJ | Caldwell Truck Co. | AS | IFB | 0.3 | 0.2 | 1.5 | |
| 6/22/89 | NH | Lipari Landfill on-site | TW | IFB | 28.0 | 16.0 | 1.8 | |
| 7/11/89 | MD | Kane & Lombard St. Drums | CA | IFB | 5.4 | 5.4 | 1.0 | |
| 7/24/89 | NY | Wide Beach Development | IT | RFP | 17.4 | 15.6 | 1.1 | |
| 8/01/89 | KS | Cherokee County Storage Tanks | AS | IFB | 0.7 | 0.6 | 1.2 | |
| 8/01/89 | DE | Delaware Sand/Gravel Landfill | CA | IFB | 2.4 | 1.5 | 1.6 | |
| 8/02/89 | RI | Western Sand & Gravel | AS | IFB | 1.2 | 0.9 | 1.3 | |
| 8/23/89 | MA | Baird & McGuire | TW | IFB | 13.5 | 11.3 | 1.2 | |
| 8/31/89 | NJ | Montclair W orange Sites | GV | IFB | 0.4 | 0.2 | 2.0 | |
| 9/06/89 | MD | S.Md.Wood Treating | CO | IFB | 3.4 | 2.6 | 1.3 | |
| 9/19/89 | NJ | Helen Kramer Landfill | TW | IFB | 73.0 | 35.9 | 2.0 | |
| 9/19/89 | PA | Moyers Landfill | CA | IFB | 33.9 | 28.5 | 1.2 | |
| TOTAL: | | | | | 410.6 | 254.5 | 1.6 | |

KEY: REMEDY TYPE

 TW- Treatment of wastes (soil and water)
 CA- RCRA Cap
 CO- Collection and disposal of wastes
 IT- Innovative technologies
 AS- Alternative water supply
 GV- Gas venting
 CO- Containment of wastes

IFB- Invitation for bids
 RFP- Requests for proposals

TABLE 2B

CORPS HTW CONTRACTS

COST OF PROJECT COMPARED TO GOVERNMENT ESTIMATE

NUMBER OF BIDS PER PROJECT

| BID DATE | ST | PROJECT NAME | PROGRAM | GOVT EST | AWARD AMT | AWARD /GOVT | AMT EST | NO. BIDS |
|-------------|----|-------------------------------|---------|-------------|--------------|----------------|------------|-------------|
| 6/04/87 | PA | Lackawanna Refuse | SF | 23.0 | 15.9 | 0.7 | | 7 |
| 3/23/88 | MA | Nyanza Chemical Waste Dump | SF | 13.0 | 8.6 | 0.7 | | 13 |
| 5/17/88 | MA | Charles George Landfill | SF | 15.0 | 15.6 | 1.0 | | 6 |
| 6/07/88 | NJ | Lang Property | SF | 4.1 | 3.6 | 0.9 | | 6 |
| 6/07/88 | NJ | Metaltec Aerosystems | SF | 3.5 | 3.4 | 1.0 | | 5 |
| 8/02/88 | OH | New Lyme Landfill | SF | 12.0 | 13.7 | 1.1 | | 5 |
| 10/06/88 | PA | Bruin Lagoon | SF | 5.0 | 4.0 | 0.8 | | 5 |
| 10/12/88 | PA | Heleva Landfill | SF | 4.7 | 5.4 | 1.1 | | 8 |
| 10/18/88 | IN | Lake Sandy Jo | SF | 2.3 | 2.4 | 1.0 | | 3 |
| 11/16/88 | NJ | Bog Creek Farm | SF | 14.0 | 14.0 | 1.0 | | 4 |
| 12/06/88 | CA | Del Norte Pesticide Storage | SF | 1.3 | 1.2 | 0.9 | | 11 |
| 2/02/89 | NJ | Bridgeport Rental/Oil Svcs. | SF | 42.0 | 52.5 | 1.3 | | 5 |
| 3/28/89 | NJ | Caldwell Truck Co. | SF | 0.2 | 0.2 | 0.8 | | 9 |
| 6/22/89 | NH | Lipari Landfill on-site | SF | 21.0 | 15.8 | 0.8 | | 4 |
| 7/11/89 | MD | Kane & Lombard St. Drums | SF | 4.0 | 4.5 | 1.1 | | 1 |
| 7/24/89 | NY | Wide Beach Development | SF | 15.6 | 15.6 | 1.0 | | 2 |
| 8/01/89 | KS | Cherokee County Storage Tanks | SF | 0.7 | 0.6 | 0.9 | | 2 |
| 8/01/89 | DE | Delaware Sand/Gravel Landfill | SF | 1.2 | 1.5 | 1.3 | | 3 |
| 8/02/89 | RI | Western Sand & Gravel | SF | 1.0 | 0.9 | 0.9 | | 9 |
| 8/23/89 | MA | Baird & McGuire | SF | 9.6 | 11.3 | 1.2 | | 5 |
| 8/31/89 | NJ | Montclair W orange Sites | SF | 0.2 | 0.2 | 1.0 | | 3 |
| 9/06/89 | MD | S.Md.Wood Treating | SF | 2.0 | 2.6 | 1.3 | | 7 |
| 9/19/89 | NJ | Helen Kramer Landfill | SF | 36.0 | 55.7 | 1.5 | | 4 |
| 9/19/89 | PA | Moyers Landfill | SF | 25.0 | 28.0 | 1.1 | | 4 |
| TOTAL: | | | | 256.4 | 277.2 | 1.12 | AVG. | |

\$1,000,000s

SF- SUPERFUND

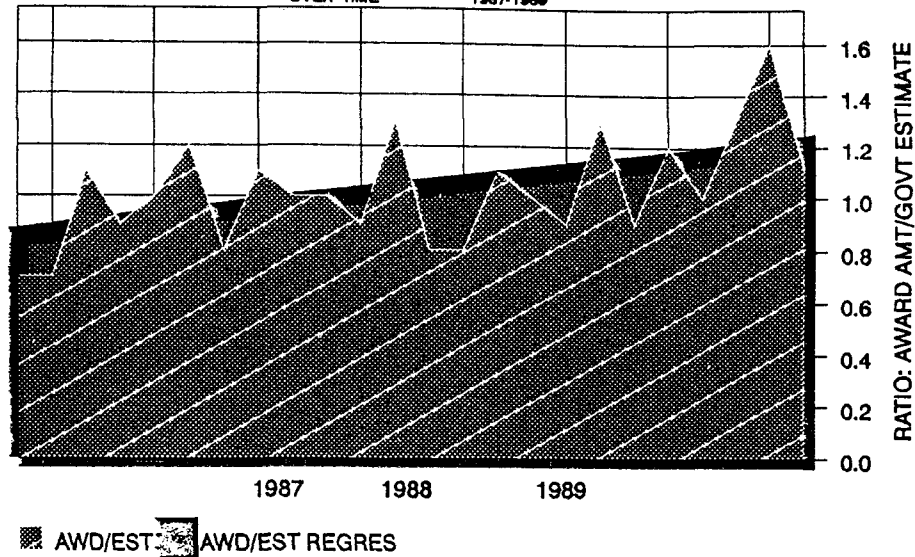
TABLE 2C

CORPS HTW CONTRACTS

PARTICIPATING CONTRACTORS AND SURETYS

| BID DATE | ST | PROJECT NAME | CONTRACTOR | SURETY NAME |
|-------------|----|-------------------------------|----------------|---------------------|
| 6/04/87 | PA | Lackawanna Refuse | Chem Waste | Federal Ins. |
| 3/23/88 | MA | Nyanza Chemical Waste Dump | Tricil | Seabd St Paul Maine |
| 5/17/88 | MA | Charles George Landfill | Tricil | Seabd St Paul Maine |
| 6/07/88 | NJ | Lang Property | Sevenson | Wausau |
| 6/07/88 | NJ | Metaltec Aerosystems | Sevenson | Wausau |
| 8/02/88 | OH | New Lyme Landfill | Sevenson | Wausau |
| 10/06/88 | PA | Bruin Lagoon | GeoCon | INA |
| 10/12/88 | PA | Heleva Landfill | Chem Waste | Federal Ins. |
| 10/18/88 | IN | Lake Sandy Jo | Weston | none, escrow |
| 11/16/88 | NJ | Bog Creek Farm | Chem Waste | Federal Ins. |
| 12/06/88 | CA | Del Norte Pesticide Storage | U A Anderson | Great America |
| 2/02/89 | NJ | Bridgeport Rental/Oil Svcs. | Ebasco | Seabd St Paul Maine |
| 3/28/89 | NJ | Caldwell Truck Co. | Ellas Constr. | Wausau |
| 6/22/89 | NH | Lipari Landfill on-site | Bechtel | Aetna Cas.& Surety |
| 7/11/89 | MD | Kane & Lombard St. Drums | GeoCon | INA |
| 7/24/89 | NY | Wide Beach Development | Kimmons | individual |
| 8/01/89 | KS | Cherokee County Storage Tanks | Pitt/Desmoines | INA |
| 8/01/89 | DE | Delaware Sand/Gravel Landfill | Weston | Indiana Lumbermans |
| 8/02/89 | RI | Western Sand & Gravel | R H White | Wausau |
| 8/23/89 | MA | Baird & McGuire | Barletta | Wausau |
| 8/31/89 | NJ | Montclair W orange Sites | Summa Env. | Intl. Fid. Ins. |
| 9/06/89 | MD | S.Md.Wood Treating | Weston | Indiana Lumbermans |
| 9/19/89 | NJ | Helen Kramer Landfill | IT, Davy | Natl. Union |
| 9/19/89 | PA | Moyers Landfill | Chem Waste | American Home |

CH 1A RATIO: AWARD AMOUNT/GOVT EST
OVER TIME 1987-1989



CH 1B RATIO: AWARD AMOUNT/GOVT ESTIMATE
BY PROJECT SIZE

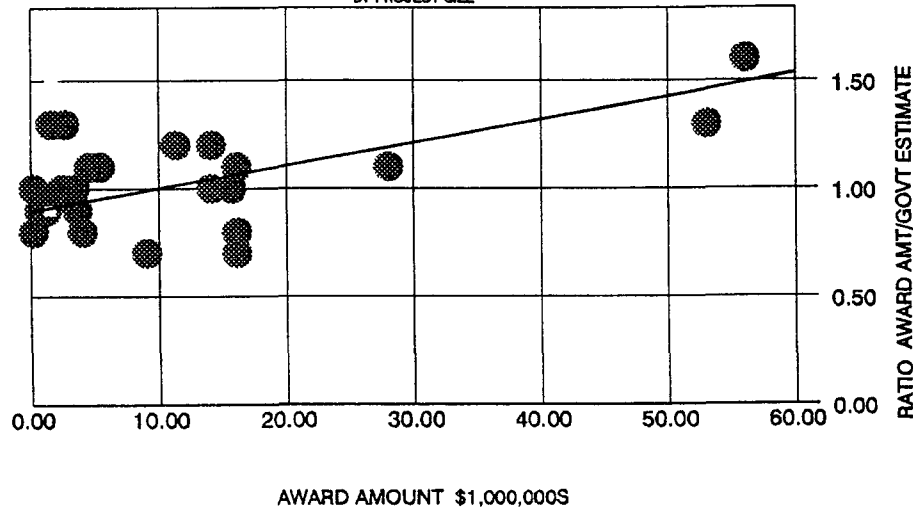
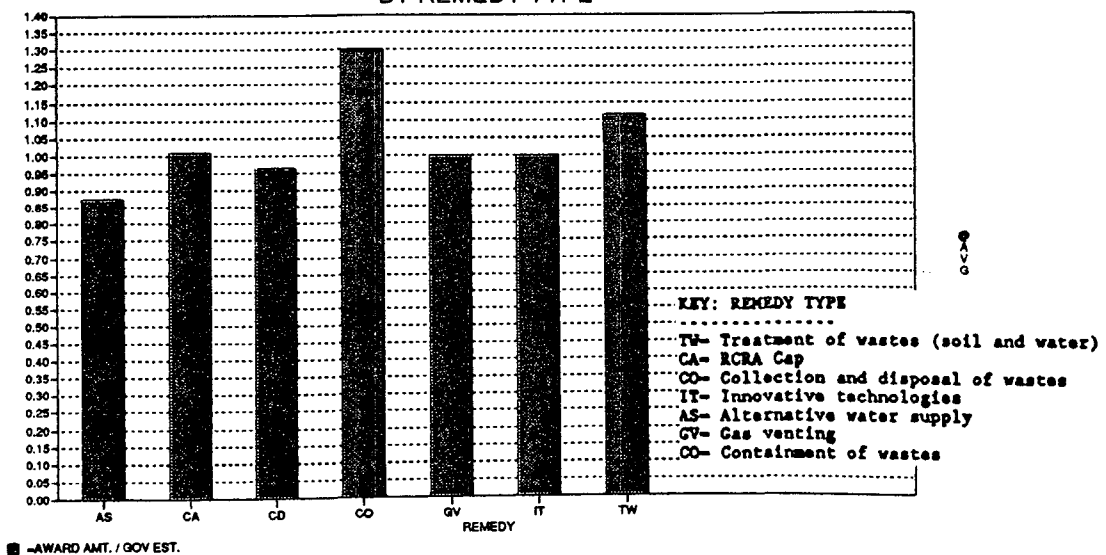
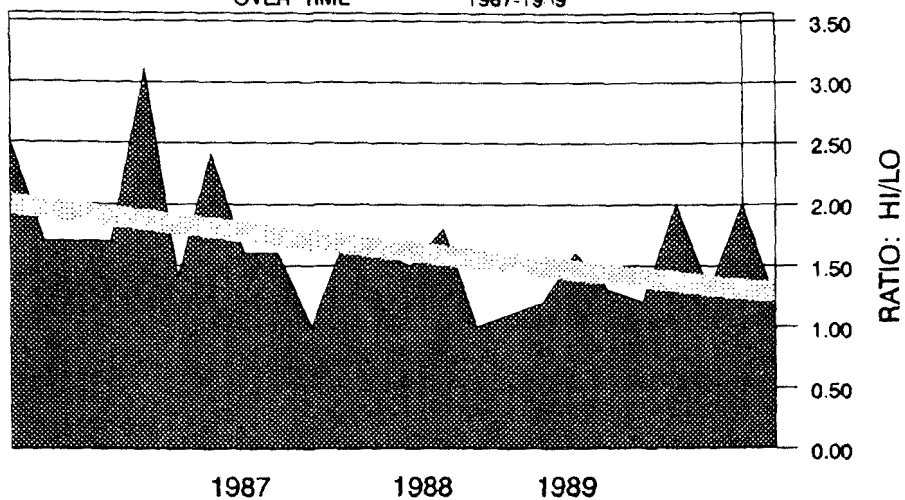


CHART 1C RATIO: AWARD AMOUNT/GOVERNMENT ESTIMATE
BY REMEDY TYPE



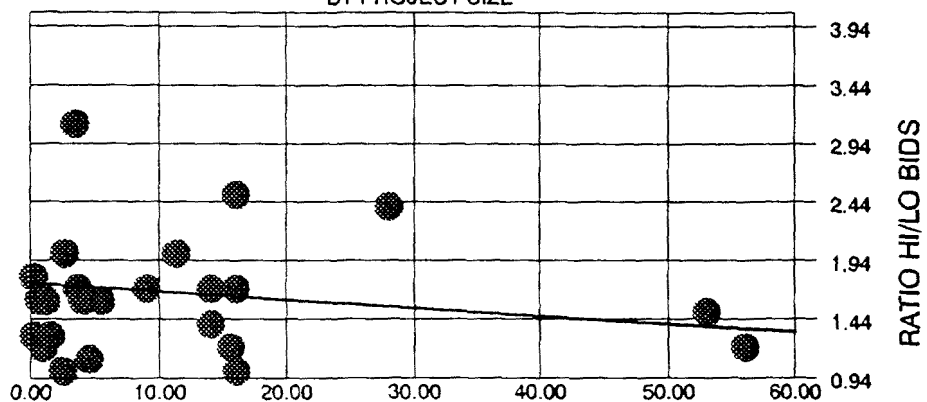
CH 2A RATIO: HI/LO BIDS

OVER TIME 1987-1989



CH 2B RATIO: HIGH/LOW BIDS

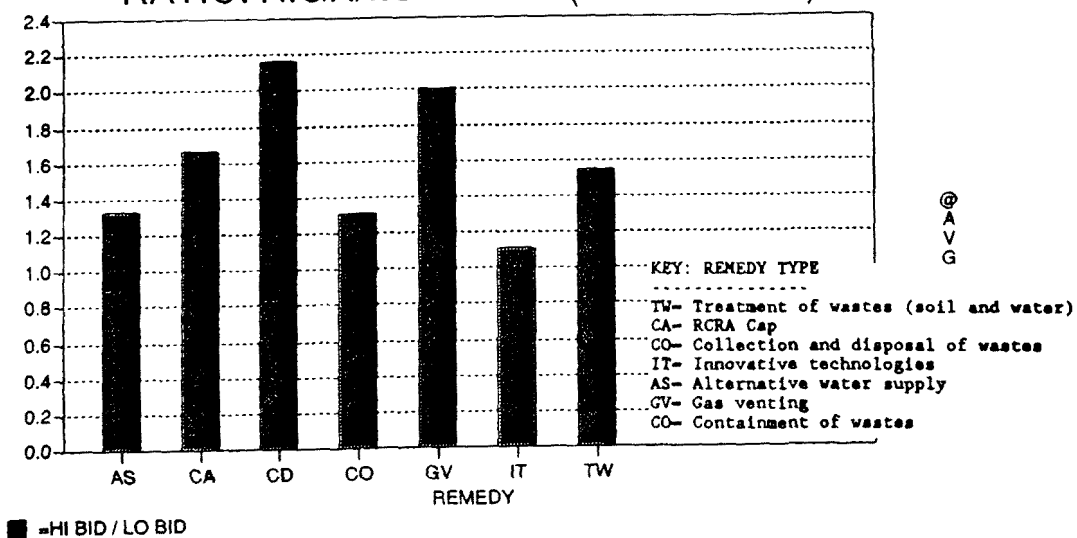
BY PROJECT SIZE



AWARD AMOUNT \$1,000,000S

● AWARD AMOUNT

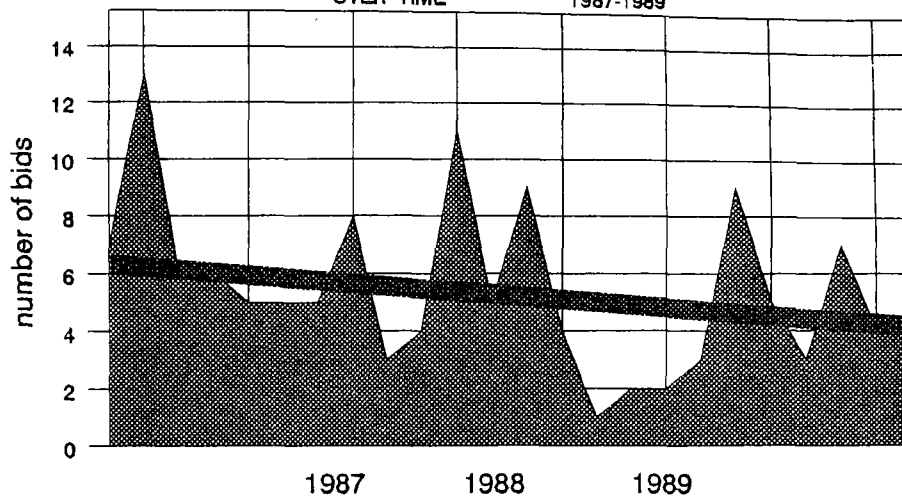
CHART 2C RATIO: HIGH/LOW BIDS (BY REMEDY)



CH 3A BIDS PER PROJECT

OVER TIME

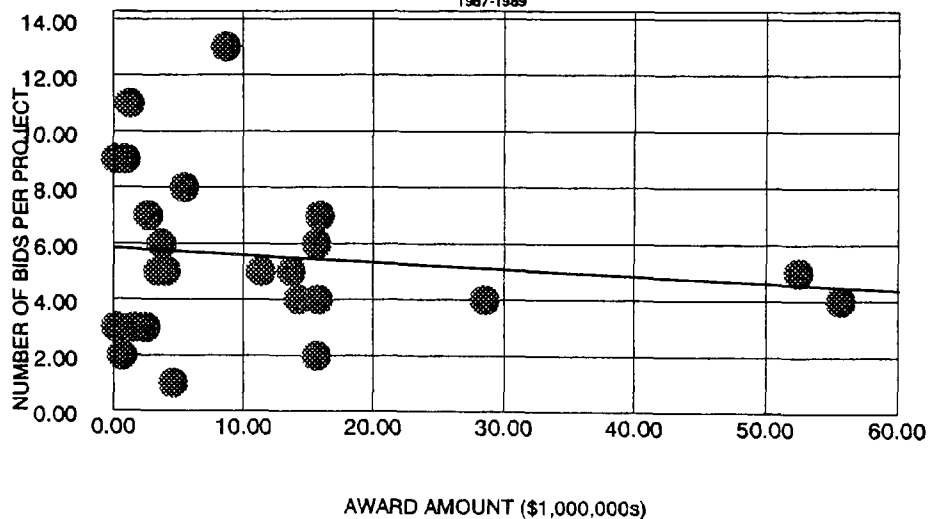
1987-1989



■ # BIDS REGRS ■ # BIDS

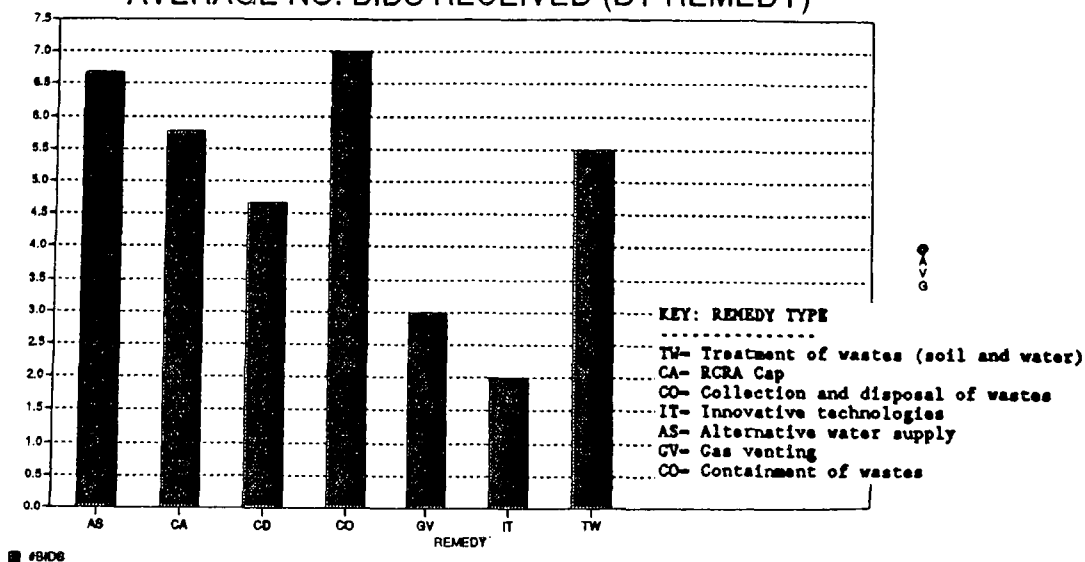
CH 3B NUMBER OF BIDS (BY AWARD AMOUNT)

1987-1989

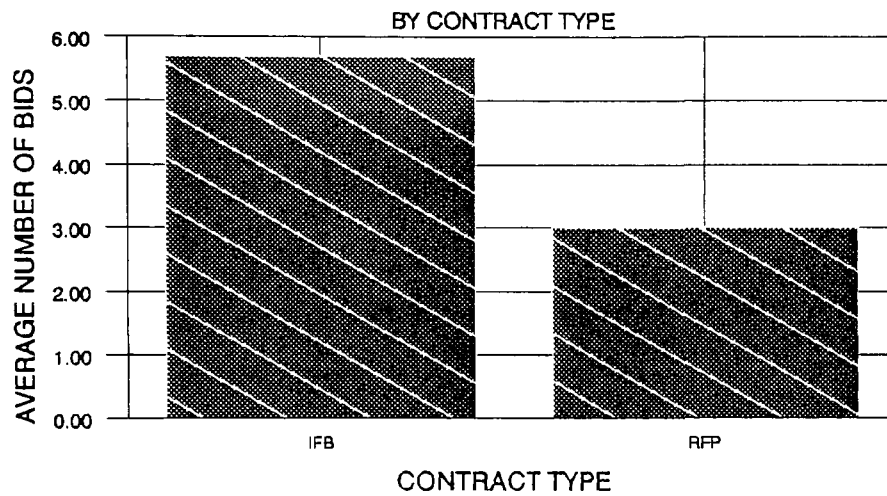


● AWARD AMOUNT

CHART 3C AVERAGE NO. BIDS RECEIVED (BY REMEDY)



CH 4 NUMBER OF BIDS



■ NO. OF BIDS

IFB=INVITATION FOR BIDS

RFP=REQUEST FOR PROPOSALS

CHART 5 CORPS HTW PROGRAM
CONTRACTORS' SHARES (\$280 MILLION TOTAL)

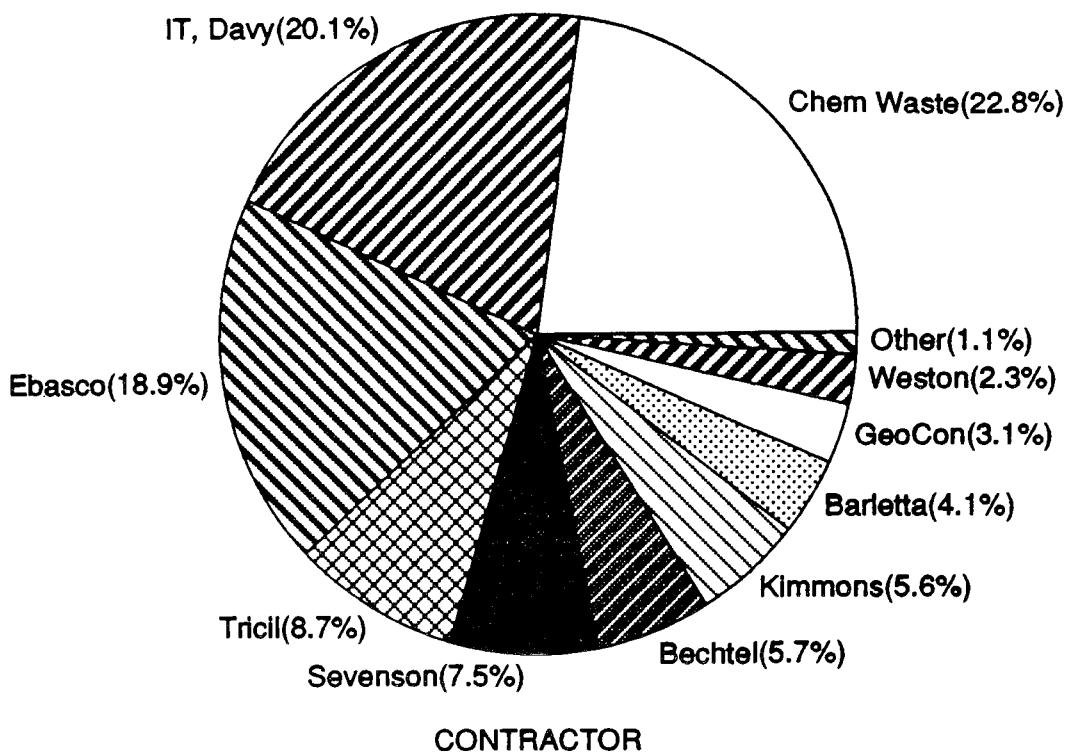
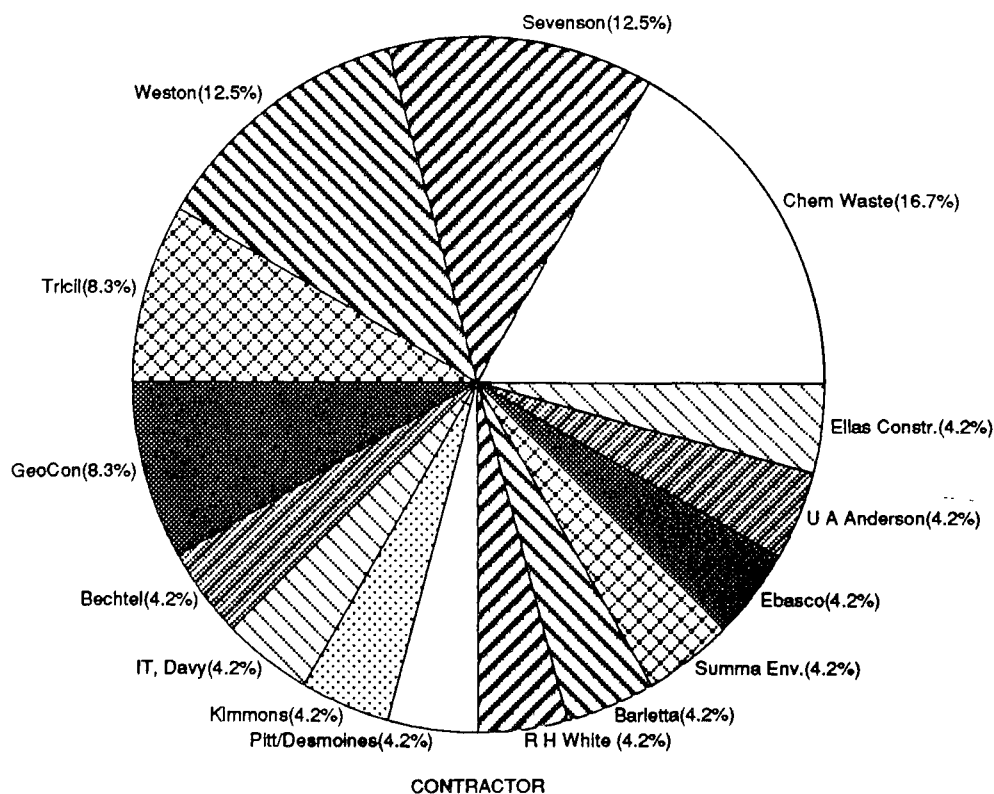


CHART 6
CONTRACTORS' SHARES (24 PROJECTS TOTAL)



e. Surety Firm Participation. The material from the Corps districts indicates that no HTW project requiring bonding was precluded from being placed under contract because of nonavailability of bonding. Some firms, however, were disqualified from competition because of their inability to provide acceptable surety. These instances usually involved contractors' use of individual sureties that after examination were found to have insufficient assets to protect the Government's interests. Where this occurred, award went to the next lowest bidder providing acceptable bonding. All contracts were eventually awarded despite problems reported by certain contractors. The surety industry participation in the Corps HTW program during 1987-1989 is depicted in Charts 7 and 8. Chart 7 indicates the percent of sureties' dollars shares covered by each surety firm. Six firms received 83% of the project dollars. Chart 8 shows the percent of sureties' project shares covered by each surety firm. Seventy-one percent of the projects were covered by five sureties.

D. HTW INDUSTRY BONDING PROBLEMS AND PERCEPTIONS

1. Contracting Industry Perceptions. From the point of view of the contracting industry, a major problem in the HTW program is that many contractors competing for contracts are unable to obtain the required surety performance bonds for construction contracts.³ Some contractors are unable to secure bonds due to the surety's perception of liability risk at HTW projects; others because contractors have exhausted their bonding capacity. Noncompeting firms maintain close contact with the surety industry and routinely seek information relative to bond availability. They are aware of the surety industry's stated reasons for not providing surety bonds. But, contractors assert that corporate surety decisions on providing bonding are not uniform. Consequently, bonding may be provided in some instances based on the surety's relationship to the contractor rather than on purely objective standards. Noncompeting firms do request mailings concerning HTW project solicitations, but they do so only to keep up to date on HTW activities or they anticipate involvement as a subcontractor. On HTW contracts around 100 firms request plans but fewer than seven usually bid.

Remedial action contractor (RAC) associations point out that there are many firms that are interested in participating in the HTW cleanup program,

CHART 7 CORPS HTW PROGRAM 1987-9 SURETIES' SHARES (\$280 MILLION TOTAL)

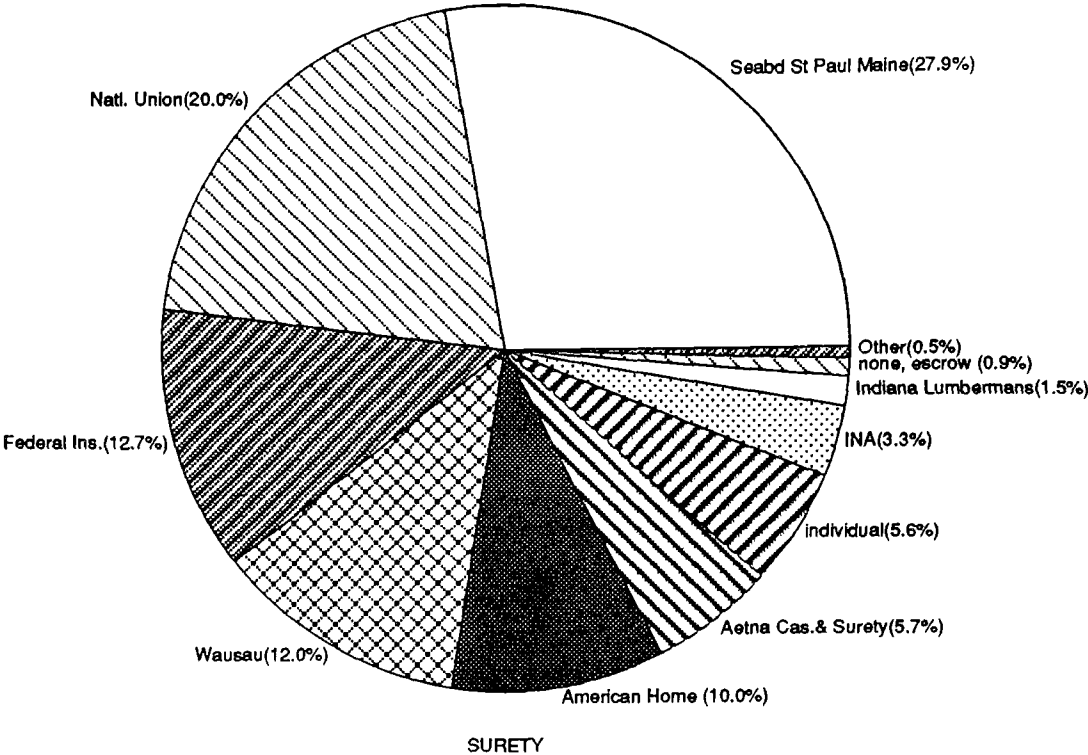
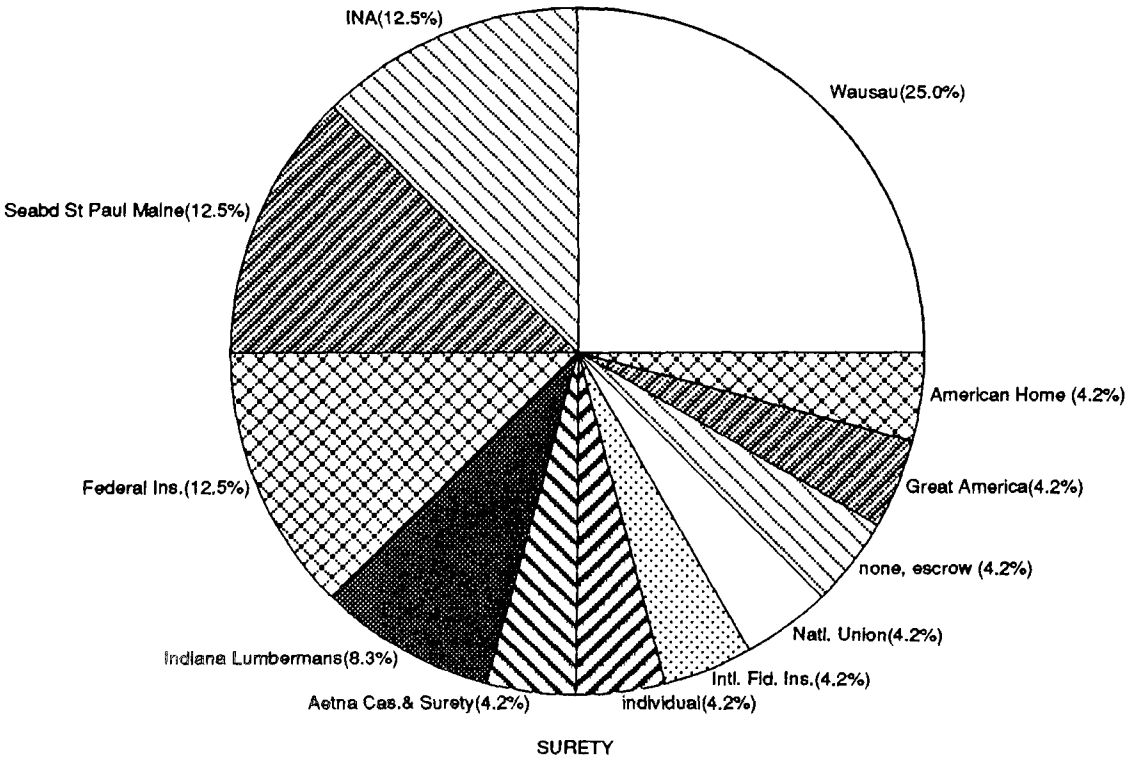


CHART 8 SURETIES' SHARES (24 PROJECTS TOTAL)



however, only a few are consistently able to meet the bonding requirements necessary to continually compete for contracts. Some companies stated that they did not even participate in bidding on HTW projects for reasons of liability and the inability to obtain performance surety bonds in the HTW area. On formally advertized sealed bid procurements inability to obtain performance bonding normally has the added effect of precluding the contractor from being able to provide the required bid bond, without which the bid is considered nonresponsive by the Government and not considered for award.

The HTW industry stated that the number of contractors bidding on HTW treatment projects is fewer than those bidding on non-hazardous and toxic waste projects, in part due to the bonding problem.⁴ One contracting firm pointed out that the HTW program is comparatively small in relation to the entire engineering and construction industry activity in this country. Many firms reported that they have elected not to participate in the HTW cleanup program when they experienced difficulties in securing bonds or anticipated complications in that area.

Contractors perceive that the problems in contracting in the HTW area to some extent are due to the Government's use of contracting procedures developed for non-HTW construction and service contracting. HTW work involves a perceived increase in the possibility of liability in excess of traditional construction projects. There is also a strong perception in the surety and insurance industry that the odds of incurring liability given recent asbestos litigation are much greater than before. Contracting firms felt that the laws, regulations, standard Government procurement forms and procedures on HTW contracting efforts were not totally appropriate. They recommended more careful scrutiny of the acquisition process to assure avoidance of inappropriate applications.

The contractor respondents were also of the opinion that the total contract amount of indefinite delivery covered hazardous and toxic waste contracts engaged in by a contractor would be assessed by the surety when upper bonding limits were decided upon for a contractor. This concern prevails in spite of the fact that the Federal government only requires bonding for delivery orders written against indefinite delivery contracts.

This had particular concern to contractors that had been awarded large, indefinite delivery contracts. They feared that sureties might use the total contract maximum, rather than actual work orders issued, to compute their bond capacity limitation.

Tables 2A-C illustrate the experience of the Omaha and Kansas City Corps districts. There were a small number of bids received on several HTW projects. This low number of bids is not necessarily due to the lack of interest in the projects. According to several HTW organizations interviewed, including the Hazardous Waste Action Coalition, Environmental Business Association, Associated General Contractors, National Solid Waste Management Association and the Remedial Contractors Institute, the key factor contributing to lower competition for some HTW projects is the inability of many contractors to secure bonding. It should be noted that in many cases firms cannot obtain bonding despite a proven history of competence in doing such work, strong financial assets and profitability and sound leadership and experience in the firm.

In some cases it was reported by both contractors and government contracting agencies that projects have been delayed due to the shortage of contractors who can obtain bonding and related surety problems. Contracting representatives for both the Corps and the states advised that they have had administrative delays as a result of contractors not being able to obtain appropriate bonding. This additional work has resulted in the slippage of project schedules.

The resulting shortage of qualified firms that are able to consistently arrange surety bonding may be reflected in higher costs to the government. Bonding's limitation on competition, with only four or five final bidders in many cases, may have resulted in higher contract bids than would otherwise be expected. Tables 2A and 2B illustrate the experience of two Corps districts in bid prices and number of bidders.

Smaller contractors, in particular, may be screened out of the HTW cleanup program market due to their inability to secure surety bonding. Several contractors stated that they do not have the extensive financial equity

necessary to satisfy corporate sureties and secure surety bonds. The results of a survey conducted by the Environmental Business Association (TEBA) showed that half of the 45 firms surveyed were unable to successfully compete for a project due to the lack of adequate bonding or had decided not to bid on contracts due to problems with securing performance bonds.

2. Surety Industry Bonding Perceptions. The problems that are perceived by the surety bond community are summarized in a document entitled "Hazardous Wastes and the Surety."⁵ This document, revised in November 1989, was continually mentioned in the interviews as the "bible" of the HTW industry concerning hazardous and toxic waste. This document delineates the issues concerning sureties in handling HTW. Some of the factors that are of particular interest and concern to the sureties follow:⁶

a. The sureties believe that design of any sort is not traditionally a surety bonded activity. Bonding companies perceive that the risk of bonding design elements of HTW cleanup is even more substantial than what is faced on normal construction projects. This stems from the view that the actual knowledge and experience in the area is limited. Designs may become obsolete very quickly as changes in the HTW processes evolve and generally there is considerable difference of opinion among technical experts on design adequacy. Performance bonds are normally used in construction contracts. In such instances, the design is fixed and technical interpretations are more uniform. However, where design elements and construction are combined in the same contract (e.g. through performance specifications), bonding problems may arise due to the increased risk to the surety associated with the unknowns on HTW project designs. However, bonding firms believe and the government agrees that the builder who specifically carries out U.S. Government-approved and-accepted plans and specifications should not be subject to these potential liabilities - absent knowledge on its part that the specifications were defective which was not brought to the Government's attention. This builder is implementing an accepted and approved design, and, therefore, is not responsible for the technology nor the methods used to carry out the cleanup.

b. Technological unknowns, particularly those in an area with potential liability such as the toxic cleanup program, are worrisome to the

surety community. Bonding companies perceive that the state of technology of the HTW cleanup process is constantly changing and very ambiguous. It is their opinion that little is known about the adequacy of the technology either concerning immediate or long-term experience. Technology may evolve that renders the present method inadequate. Sureties are concerned that this may leave the designer-builder potentially liable if the present HTW legal climate continues.

c. Surety firms have stated that the present unfavorable legal environment, with widespread litigation and large awards, has made insurance companies very cautious about insuring HTW projects. Although vocal in their assertions that they not be treated as a substitute for insurance, they fear that by bonding such work they may in the future be sought out based on a legal theory which would treat them as if they were insurance. The cause for liability, such as the appearance of a disease 20 or more years after exposure to toxic substances, leads to a very uncertain situation for sureties.

d. According to the surety firms interviewed, toxic tort litigation features are an important reason for their present reluctance to participate in the HTW cleanup field. In the toxic tort arena a very long time period (10 or 20 years) between exposure and development of injury is typical. Unlike other prototypical injury situations, toxic liability involves long time periods⁷ between the alleged exposure and the discovery of damages. Since this litigation takes place in state courts, the indemnification under SARA is not helpful, nor legally binding on the states.

e. Insurance. The Hazardous Waste Action Coalition, an organization comprised of technical consulting firms in the HTW field, along with Marsh and McLennan, a large insurance broker, held a meeting in Washington, D.C. on September 13, 1989, in which a series of speakers outlined the insurance and indemnification problems confronting the contracting industry. The collected papers of this meeting are entitled "Pollution Insurance/Indemnification Issues for Engineers in Hazardous Waste Cleanup". The papers point out that the present insurance coverage is not adequate in many areas. They also express the insurance industry's concern that potential litigation uncertainties play a major part in their decisions to forego providing

pollution liability insurance coverage. The same concerns regarding the unknown risk of involvement in the HTW market are equally important to sureties that must decide whether to provide needed bonding for the program. The following summarizes some of the findings contained in these papers on the shortcomings of present coverage for HTW projects:

1) Present HTW construction contractors' pollution insurance coverage has only limited spatial or geographic coverage. Some policies cover only on-site liabilities. In some cases, HTW liability may be off-site due to hazardous substances being carried beyond the borders of the site by wind, water runoff, or underground seepage.

2) Claims-made insurance only. The insurance coverage is on a claims-made basis and does not cover the period after the completion of the project unless the contractor continues to carry the insurance. Moreover, even where a contractor may choose to continue coverage, it may not be able to do so because of the insurance company's decision to no longer make such coverage available. The short time period (one year) covered by claims-made insurance precludes coverage over the long period of 20 years or so in which claims may be made in the HTW area. In claims-made insurance, the policy is only in force during the period when premiums are being paid. With respect to HTW cleanup, this would be normally the period of contract performance including any contractually required warranty periods.

3) Low dollar limits. Surety organizations state that the upper dollar limits in presently available pollution liability coverage are insufficient to cover the risks associated on HTW projects. The comparatively low limits of the insurance policies outlined in the document would only be adequate for smaller HTW projects where proven technology would be employed on an isolated site.

4) There is a concern by surety firms that they will be targeted by third party liability plaintiffs in the event other parties whose actions may have caused the injury are judgment proof. The lack of sufficient insurance or indemnification for the HTW remedial action contractor leads some bond underwriters to be concerned that the corporate surety based on its providing a surety performance bond may be adjudicated to fill the insurance void so that the third party's injury can be compensated. They worry that, after insurance coverage has lapsed or expired, and perhaps after decades have passed, the corporate surety firm which provided the bond may be looked upon

by the courts as the insurer of last resort or a "deep pocket."⁸ This unknown risk has led some corporate sureties to forego involvement in the HTW market. Surety bond producers that have made such a decision indicate that they would be more likely to participate in the market if the applicability of SARA indemnification to the surety was clarified. Moreover, that the performance surety bond be clearly represented as being intended by the Government solely as a guarantee of performance by the contractor and not in anyway as protection for the contractor's tortuous injuries to third parties.

f. Greater risk to Government. In response to claims by some contractor interests that bonding could be substantially reduced for certain categories of HTW work, surety sources stated that risks of non-performance increase if construction contracts are awarded either without surety bonds or with lower rated surety performance bonds. Surety officers contacted in the survey pointed out the trade-offs involved risks to the government if surety bonds were not used on projects that normally would be surety bonded. They emphasized that surety firms perform a valuable service for the government in screening out potential problem contractors from the pool of contractors competing on government construction projects.

g. Indemnification. The sureties and contractors have listed many perceived problems with the present SARA⁹ indemnity law. There is dissatisfaction over the amount of indemnification coverage, as well as the extent of the coverage and even what events are indemnified. Sureties find that the definition of what is the maximum dollar coverage of the indemnity is not specific. CERCLA sets the upper limit of the indemnification amount as the funding that is remaining in the Superfund account. However Section 119 says "If sufficient funds are unavailable in the...Superfund... to make payments pursuant to such indemnification or if the fund is repeated. There are authorized to be appropriated such amounts as may be necessary to make such payments. Sureties and contractors are of the opinion that such limitation on indemnification may prove inadequate in the future if there are limited funds available in the Superfund account at the time indemnification requests ripen. The EPA is presently addressing the limit on indemnification problem in proposed draft guidelines for implementing Section 119 of SARA.

IV. CONCLUSIONS

TRENDS OVER TIME

Twenty four HTW projects were examined in the study. Contract data was assembled for the bidding process on these projects including contractors and sureties participating, bid amounts, project dates, project types and government estimates. The information presented in Tables 2A-C and Charts 1a-c and 3a-c summarize the relationships of these factors and shows the trends in these elements over the past few years. The information was analyzed with emphasis on the relationships between award amount and government estimates, the ratio between high and low estimates and the number of bids received. The respective shares of the HTW market for contractors and for sureties were also examined.

There tends to be an increasing trend in the ratio of contract award amount to government estimate over time. The average ratio has climbed from .8 to 1.2 over approximately a two year period. This has transpired while the ratio of high bids to low bids has been falling from 2 to 1.3 and the number of bids received on the average for each project has dropped from 6.2 to 4.6. This information suggests a decrease in competition for projects in the HTW field over the time period and to an apparent increase in price at the same time. The decreasing ratio of high to low bids over the same period also is an indication of a changed competitive situation.

Relationship of project size. The relationship of the project size and these various factors was examined. As the projects increased in size, the ratio of the award amount to the government estimate increased from .9 for small projects to 1.5 in the \$60 million dollar range, indicating the lessening of competition for large contracts where few contractors can compete. At the same time the average number of bids per project decreased with the size of the project, reflecting the fact that few contractors are currently available to compete for these large HTW projects. The average of 6 bids for smaller contracts was reduced to 4.5 on the contracts in the range of \$60,000,000 at the higher end of the scale. These findings, although not

conclusive, indicate a pattern of competition in the field that shows a limited availability of eligible contractors. The expanding HTW cleanup requirement will exacerbate this situation

Relationship of project type. Examination of the relationship of the ratio of award amount to government estimate shows that the ratio is acceptable, except for containment projects where the ratio was 1.3 to 1. The largest spread for the variation of high and low bids was in the projects involving collection and disposal of wastes, 2.2 to 1, while the next greatest variation was for gas venting projects which ran 2 to 1. The heaviest competition was evidenced in the average number of bids (7) received for waste containment projects with the next highest number (6.5) bids for alternate water supply projects. It is noted that the average number of bids received for RFP's was only 3, compared with nearly double that amount for Invitations for bids.

Contractors' project market shares. The shares of the HTW cleanup market (24 Corps projects) are heavily concentrated in a relatively small number of contractors. Chart 5 shows that three firms or joint partnerships have about 60% of the dollar market of HTW projects and 5 of the 15 firms have successfully bid for about 58% of the total number of projects. The rest of the projects are being spread among the remainder of contractors, some of which are quite large. While the total is still small, the concentration of activity in a few firms tends to persist and is not assuring to those aspiring to participate in the program.

Sureties' market shares. Surety bond providers are also unequally represented in the list of sureties shares of the project pie. Five sureties or surety combinations account for 83% of the project bond dollars and five sureties or combinations bonded 70% of the Corps 24 projects analyzed in the study. This illustrates the case that few sureties are interested in providing bonding for HTW projects.

The foregoing experience presented in the contracting information from the Corps Kansas City and Omaha Districts reinforces the story presented by the

government contracting officers, and the contracting and surety industries. The experience is that the market is constricted for contractors in the HTW field and the availability of bonding is a problem. Although all projects have proceeded and none have been stopped by lack of bond availability, the difficulties that have been encountered in the bonding area have impacted the cleanup process by delaying schedules, reducing competition and ultimately thereby, increasing the prices paid for cleanup.

Financial risk. Who is affected? The government, the HTW contractors and the surety industry are all at risk in the HTW cleanup process. A key aspect in this analysis is the assumption of financial risk in the HTW program. Some risk is assumed by the government and some by industry. The problems arise when the financial risks are examined in detail and found to be such that private industry declines to participate due to the perception that it will have to bear what it considers to be more than its share of the risk. Historically, the surety industry has provided performance bonds to cover the risks of nonperformance by construction contractors. However, in the HTW area, there has been a great deal of reluctance to do so for fear of extended liability due to the long term nature of liabilities involved and other factors of uncertainty in the CERCLA area. The projects involved risk uncertainties in terms of the present and the future state of the art of the HTW cleanup technology. The state of the art is constantly changing and improved techniques lead to future pollution standards that may be higher and more stringent.

Physical risk. Who or what is impacted? The environment, cleanup site workers and the local residents are affected by the physical risk. The risks exist during the cleanup of the project, and extend through the warranty and the latent defect period of the cleanup project. However, due to the nature of hazardous waste, the risk may last for years, decades or forever. This problem of unknown risk and uncertain liability must be addressed and the risk to industry must be bounded in order to gain its full participation in the HTW program. In order to reduce the physical risk over the long term, the actions taken involve financial uncertainties and liabilities. The government must assume a certain level of responsibility for these uncertainties. The total

level of risk does not disappear; it is merely transferred from one entity of society to another. It is not reasonable to expect private industry to voluntarily participate in a high risk enterprise unless a high premium is paid. Many government programs are structured to reduce this uncertainty in new high tech and experimental enterprises to a level that is manageable by the private sector.

Indemnification, insurance, bonding and contractual agreements are all mechanisms to transfer risk. The present situation in the HTW cleanup area brings this aspect of risk, and who must assume risks for the nation's cleanup, into focus. There is a need in the HTW program for the definition of the risk involved and the assignment of each risk to the proper entity. Guidelines are necessary to spell out and clarify the appropriate responsibilities that will be borne by government agencies and those that are within the purview of private enterprise.

Indemnification is a tool that transfers the risks from private industry to the government. One problem with indemnification in HTW cleanups is the uncertainty of coverage. It is not known at the time of bid openings whether coverage will be available to the contractor or the surety, and, if it is, the maximum amount of coverage is unknown.

Another tool commonly used to manage uncertainty is insurance. Insurance presently available to contractors is inadequate. The maximum amount available is much too low, the time period of coverage is too limited, and third parties are not covered. Thus, the transfer of risk to the insurance industry is quite limited.

The bonding process is another way to transfer uncertainties from the government. It is a traditional way to transfer risk in the construction area where construction occurs over a long time period and commitments must be made for the entire project before the project can proceed. The traditional risk covered by construction performance bonds was that the project be completed as designed, that the contractor assumed responsibility during the construction period, the warranty and the latent defect period. Problems have arisen in

the bonding of HTW projects because of perceived new and unanticipated risks being possibly transferred to the surety. These perceived new risks entail additional possible responsibilities for project efficacy, design (performance specifications) and third party suits. It is in this area that the present problems of uncertainty have surfaced and are at this time a subject of considerable concern.

This study indicates that the problem of performance bond availability for HTW construction work may be limiting the number of qualified contractors that can compete for such work. In some cases, the limitation on firms able to compete, when coupled with requirements on the government necessitating a high number of HTW contract awards within a short span of time, may have caused competing firms to be less competitive in their bid submittals.

The data analyzed does not clearly indicate any serious problems at this time. However, the contract information on the twenty-four projects analyzed may be skewed due to a concentration of contracts during September and October of 1989. Although trends are suggested, the data is not sufficient to draw specific conclusions. Continuous observations of award data is necessary to determine if trends are developing.

While not yet resulting in the government not being able to get competition on its HTW projects or to carry through on its remedial action programs, the clear implication of industry comments received is that the concern being expressed by the surety industry over providing bonding for HTW projects may well ultimately lead to a situation where bonding limitations will arbitrarily curtail the extent of competition realized by the government for such work. This concern may threaten the government's ability to successfully acquire the construction services needed.

This report has reviewed both subjective data gained from interviewing various HTW industry representatives and objective data based on bids received by the Corps. While the information from interviews is subjective, it does represent the industry mind set and as such govern industry decision-making. Where there is little or no risk, it is appropriate to try to minimize

industry fears. The underlying industry concern is risk to the contractor and/or the surety. Factors affecting risk include: indemnification, insurance and bonding. These risk factors influence one another, e.g., if indemnification is available to the surety, then bonding may be more readily available. No single action will solve all the bonding problems. Additional conclusions are listed below:

- The government must select the most appropriate acquisition strategy early in the solicitation process. Risk to sureties, contractors and the government should be considered in addition to other site requirements.

- The government acquisition strategy should address the need to make an early decision whether to use a service or construction contract. In some cases, different contract types may be used for different project phases within the same contract. Miller Act, Davis-Bacon Act and Service Contract Act decisions should be made on their merits and without regard to bonding or cost implications.

Contracts should be structured, the type of contracts selected and bonding requirements established, to appropriately protect the government's interests. These interests include: insuring that contractors capable of performing the contract remain eligible and that the selected contractor performs as promised.

HTW cleanup agencies should explicitly decide how much performance bonding is required and how that bonding should be structured. Normal practice is to require 100% performance bonding for construction contracts and zero bonding for service contracts, although the contracting officer can select other percentages. We need to assure that the amount selected is only that needed to protect government interests.

Sureties only want to assure that the remedial action contractor constructs what was required by the plans and specifications. They wish to avoid design/construct contracts or contracts containing major performance specifications.

- There is a strong perception by the industry that difficulties with bonds is limiting competition. RA contractors report that they have not bid projects due to unavailability of bonding. Sureties indicate that the risk is too large.

- Contractors want to be able to provide alternate monetary protection to the Government, i.e., letters of credit. While the Government cannot at present accept letters of credit directly, letters of credit can be used as an asset by an individual surety. Regulations would be required to allow the Government to directly accept letters of credit in lieu of surety bonding.

- Sureties want indemnification for both themselves and their contractors should they have to assume responsibility for project execution or design.

- Protection of the Government interest can be achieved by performance bonding, by careful selection of competent contractors or a combination of the two. The Corps has, for the most part, used construction contracting where the primary method of contractor selection is by low bid. Since control over contractor selection is limited, the Government has compensated by demanding 100% bonding. An alternative would be to use an RFP where technical capability, management expertise, experience, and price are considered in contractor selection. With more confidence in contractor capability, a lower performance bond might be appropriate. The government should attempt to mitigate contractor and surety concerns while maintaining appropriate protection of the government interest.

V. OPTIONS EXAMINED

A. INTRODUCTION

Discussions conducted during the study with industry, contractor, and government personnel raised several possible alternatives that might be taken to increase the availability of bonds to HTW construction contractors. These alternatives fall into two general categories as follows:

- o Non-Legislative Changes. Internal Corps and EPA non-legislative changes in procedures related to contracting strategy and implementation of the authorities which each agency already possesses.
- o Legislative Changes. includes revisions to regulations which guide each agency but which neither possesses the authority to revise independently; revisions to existing statutes so as to, (1) eliminate requirements that serve to lessen the corporate surety industry's interest in bonding of HTW projects and, (2) to clarify that performance bonds are to be used only to assure that the contractor will complete all contractual requirements and are not a vehicle by which third party claims may be satisfied.

Of the options available to the government to alleviate the bonding problem, many are centered on the concept of management of risk by the government. Financial and physical risk exist in the cleanup process and the government needs to incorporate risk analysis into its planning process to examine the trade offs in costs and benefits of the transfers of these risks between government and the private sector. In the case of bonding HTW cleanup projects, the government must examine the assumption of higher risks in non-performance of contracts for HTW cleanup against the gains of more competition by the cleanup industry and the resultant lower prices for projects.

It should be pointed out that the bonding community generally does perform a service for the Government contracting agency in making its evaluation to bond a particular contractor. In making this decision, it carefully analyses the contractor's financial and technical competence to do the work as well as

its history of performance. In this respect, it supplements the pre-award survey performed by the contracting officer to make his affirmative determination of contractor responsibility. However, in the case of HTW projects, the surety community appears to allow its concern for the unknown risks associated with such work to overshadow its consideration of more conventional factors reflecting the contractor's capability to perform. The study indicated that many sureties foreclosed any consideration of bonding a contractor based solely on the fact that the project was associated with HTW. In doing so, the surety did not analyze the contractor's ability to perform as it would have done on a non-HTW construction project.

B. NON-LEGISLATIVE CHANGES

These options address solutions which can be readily implemented by the various agencies concerned. They primarily focus on issues related to the contracting process. In some cases, they call for clarification of each agency's existing activities. In other instances, they call for new initiatives by the agencies to assure that bonding requirements and the acquisition factors which may have a major impact on the availability of bonding will be given careful consideration during the acquisition planning process. Table 3 summarizes the types of options, their advantages and disadvantages, the lead agency for implementation, and their priority.

In some cases, the options recognize that implementation will necessitate a tradeoff of protection for the Government against contractor nonperformance. The advisability of accepting such a tradeoff will need to be evaluated for each contract. This will be done in light of the risk being assumed by the Government, versus the benefits to be derived from the potential improvement in the competitive climate associated with lowering the bond requirement.

While implementation of these options may promote greater interest in HTW work by both contractors and corporate sureties, increased interest and competition may not necessarily reduce the cost of the work. Moreover, any decision to lessen bonding requirements must be completed with special emphasis being placed on the pre-award survey procedures by the procuring agency.

TABLE 3
TYPES OF OPTIONS

| Options | Advantages | Disadvantages | Implemented By |
|--|--|--|----------------|
| NON-LEGISLATIVE CHANGES | | | |
| 1. <u>Improved Acquisition Planning and Bond Structuring:</u> A. Require increased acquisition planning. Incorporate analysis of service contracts vs. construction contracts and incorporate cost type contracts into acquisition plan. | May reduce obstacles, induces more participation by contractors | Use of service contracts with no bonds may increase risk to government. May request use of bonds from USACE. H.O. Procurement. | Each agency |
| B. Provide Guidance on Bonding Requirements. Reduction of penal amount of bond. HTW Policy Guidance, 2 year test program. | Reduces bond portion project costs, induces more and greater variety of contractors to bid (e.g. smaller firms). | Limits non-performance protection to government, more marginal contractors. | Each agency |
| C. Clarify performance period. | Same as above. | All bonds must be in place before notice to proceed is issued. Initially difficult to set up guidance. Can be accomplished more simply by reduction of penal amount of bond. | Each agency |
| 2. <u>Clarify surety liability under SARA:</u> A. Define third party risk. Bond form and contract modifications including 3rd party exclusion clauses, exclusion of bond as liability insurance substitute. Requires a change in the regulations. | Removal of sureties' stated objections to contractual clauses. Inducement to participate in HTW program. | Will take one and one-half years to implement interagency coordination needed. | Each agency |
| B. Surety Indemnification. Provide indemnification for sureties if they assume project control. | Induce more surety and contractor participation in HTW program. | May increase Federal liability for indemnification. | EPA |
| C. Define bond completion period. | Induces more surety and participation in program. | None. | Each agency |
| 3. <u>Indemnification guidelines:</u> Modify proposed indemnification regulations, establish high maximum limits and clarify qualifying requirements. | Limits Federal liability for indemnification. | May discourage participation by sureties, if limits are set too low. | EPA |
| 4. <u>Communication with Industry:</u> Outreach program for contractors and sureties. Technology education program. | May encourage contractors sureties to participate in program. | Effectiveness unknown. | Each agency |
| 5. <u>Limit Risk Potential:</u> A. Clarify contract policy on RFP performance specifications and design-build. | Separating out design portion may encourage sureties to participate in program. | Imprecise clause could limit contractor performance obligations more than necessary. | Each agency |
| B. Use of irrevocable letters of credit vs. bonds. | Enables some contractors to participate in program. | Additional administrative burden, increased financial costs to contractors ties up assets. | Each agency |
| LEGISLATIVE CHANGES: | | | |
| A. Increase separate dollar limit reserves from SARA fund and increase types of coverage for indemnification and types of coverage for indemnification. | Induce more sureties and contractors to participate. | Additional administrative burden, increased financial costs to contractors ties up assets. | Each agency |
| B. Specify a dollar cap on liability. | Induce more contractor and surety participation. | Federal government assumes more risk. | EPA |
| C. Preempt state's strict liability sureties. Provide universal indemnity. | Induce sureties and contractors to participate in program. | Reduction of public protection against HTW hazards. | EPA |
| D. Modify CERCLA or Miller Act. Specify performance bonds are only to assure completion of contract requirements. | Induce sureties and contractors to participate in program. | Reduction of public protection against HTW liability hazards. | Each agency |

1. Improved Acquisition Planning & Bond Structuring. These options require that the procuring agency be especially sensitive to its characterization of the work to be performed under the HTW contract and vigilant to preclude bonding requirements that are excessive to the needs of the Government. If work under one contract is both service and construction and duties are not severable, the largest part of the effort (service or construction) will prevail. HTW contracts involving incineration or other treatment technologies will usually involve work elements in both the construction and service categories of work. The Miller Act bonding requirements apply only to construction, while service work does not require any bonding unless the contracting officer views it as being needed to protect a legitimate Governmental interest.

a. Background. The study found that early soil incineration contracts were considered by a Corps district to be service work requiring no bonding. When a decision by the Department of Labor concluded that hazardous soil excavation for shipment to a landfill constituted construction, a different Corps district treated excavation associated with an HTW incineration project as construction requiring Miller Act performance and payment bond protection. In this latter case, the actual incineration process was classified as being service work. Although as service work there was no need to provide bonding for the work, the contracting officer, concluded that the incineration process was so closely tied to the excavation work that the penal amount of the performance bond should encompass both work categories. This substantially raised the performance bond amount and led to a protest from a firm which was precluded from competing due to its inability to obtain the required bonding. This firm had successfully performed the work required under the original service incineration project. The comptroller general ultimately updated the contracting officers discretion to require 100% of performance bonding for this project.

This incident, as well as indications from a recent Superfund project performed for EPA by the State of Texas, (see page 18) highlight the necessity for the procuring agency to closely analyze its bonding requirements in light of the work to be performed and the extent of protection needed for the

Government. This should be done early in the acquisition process to assure that the competition benefits that might be gained by such effort can be fully maximized. The decision of whether to use a service contract or a construction contract must be made on their respective merits and not on the impacts of securing performance bonding. A separate set of procedures is required to establish the bonding requirement.

In making this bonding determination it is also important to recognize that the surety community's concern regarding the risk associated with HTW work will probably lead to the surety not stepping forward to complete the project in the event of a contractor default. Consequently, it is likely that the Government will benefit only from the surety's providing the penal sum of the performance bond. The Government probably will still need to reprocore the work. Contractors pointed out that sureties were requiring substantial financial commitments from contractors as a prerequisite to providing bonding. This fact would tend to make the surety even more inclined to buy itself out rather than assume the greater risk burden associated with its takeover of the defaulted contract. The reality then appears to be that the performance bond is primarily protecting the Government's financial stake in the contract rather than its interest in not having to deal with reprocorement upon default.

In looking at the character of work to be performed under an HTW contract, it may well be that the nature of the work and the payment arrangements employed by the Government may provide a measure of protection in themselves that could warrant a lower bonding percentage. In the excavation situation, and even more so where we are dealing with incineration service work, many of the payments to the contractor are subject to its performing satisfactorily. A default after partial performance requires that the Government procure another contractor to continue performance. This default situation, however, is substantially different from that faced where we are dealing with a building construction project. In the former case, the work to be completed is relatively easy to determine. This is in sharp contrast to the problem facing the Government where multiple subcontractors and complex design requirements must be determined and taken into consideration in a vertical

construction project. While some bonding may be appropriate to cover the risk to the Government associated with paid mobilization costs and potentially higher reprocurement costs on HTW treatment technologies projects, it may appear excessive to require that performance bonding cover 100% of the total contract amount where that includes the cost of the treatment technology service over a significant period of time. In the case of incineration projects, an incinerator is constructed by the contractor, operated over an extended period of time during the cleanup and demobilized and moved away afterwards. The Corps should analyze, in its acquisition plan preparation, the possibility of the Government utilizing the incinerator for continuing the cleanup in the event of contractor default. The contract may be modified to include terms for this contingency. Many alternative contract structures may be utilized. Some specific alternatives are shown below in Table 4. These are merely examples. The contracting officer is within his discretion to require no bonding whatever where the project is predominantly for service.

TABLE 4

Sample Alternative Contract for Incineration

| Phase | Erection & Prove Out | Operation Excavation & Stockpile | Operation Incineration Site Restoration. Capping, Landscaping | Demobili- zation of plant and equipment |
|--|-------------------------|--|--|--|
| Alt#1: Single Construction Contract with Davis-Bacon Wage Rates | Full Bond | Very Low Bond | Very Low Bond | Full Bond |
| Alt#2: Service Contract & Service Contract Rates | Full Bond | No Bond | No Bond | Full Bond |

b. Require Increased Acquisition Planning. The contracting process, including the bonding issues, should be integrated into a project acquisition plan. An analysis of the risk trade offs to the Government may be incorporated into the acquisition planning process for HTW projects. Presently the Federal Government requires performance bonds to assure against the uncertainty of project non-performance on construction projects as mandated by the Miller Act. The cost of this protection should approximate the cost of the potential non-performance risk in the long run. The trade offs of this risk may be examined in the acquisition planning process for each project. The process will analyze the benefits and costs of the Government assuming slightly higher risks in project performance and the resultant benefits and costs of improving the competitive climate for HTW contracting and the consequent reduction in contract prices. This may involve the analysis of each phase of the cleanup and the appropriate level of bonding that would afford adequate protection for the Government's interests and still encourage participation by the bonding industry. Careful examination of the contract alternatives, service contracts or construction contracts, should be carried out by an interdisciplinary team, "recommending" to the contracting officer, although final disposition will be made by the Department of Labor. Meetings are being planned for early summer 1990 between EPA, Corps and Department of Labor representatives to clarify the classification of construction and service contracts under the Davis-Bacon and Service contract Acts.

Cost type contracts should be given careful consideration where there are significant technological unknowns associated with undertaking an HTW project. It is not in the program's interest for the contractor to be required to bear an inordinate share of the risk. Requiring fixed priced contracts under such conditions places both the contractor and surety in an unacceptable risk condition and would increase the cost to the government significantly.

Multiple contracts are another action which could be considered by the Government during its acquisition planning to limit the risk potential for the bonding community. The approach would be to structure the contract requirements so as to limit or isolate the activity requiring a surety bond

from other work that normally would not require bonding if contracted independently. The project should be divided into separate contracts with appropriate bonding for each contract. This would require the use of multiple contract awards to assure that elements of work not requiring bonding are procured separately from construction work elements.

There are drawbacks to multiple contracts. If the requirement is split, it must be determined to be severable. Problems may well be encountered in assuring timely award of contracts. A delay in one award or a failure to insure timely completion of a contract will mean delay for all later contracts. This will require substantially increased administrative oversight and procurement effort on the Government's part because of the greater number of awards to be made. Furthermore, the lack of bonding on what may be key elements of the remedial action will require greater care by the Government in performing its pre-award survey on the contractor's responsibility.

c. Provide Guidance on Bonding Requirements. Uniform guidance needs to be issued on evaluating bonding requirements appropriate for HTW work. It is imperative that any such guidance take into consideration the importance of safeguarding the discretion of the contracting officer in such matters.

d. Clarify Performance Period. Minimize the time period of surety performance and thereby reduce the time exposure for surety coverage. Use time-phased bonding, with incremental reduction in the penal amount through time, as the work is completed. A similar strategy involves the division of the project into phases and a requirement for bonding only on the active part of the project.

The amount of a bond can be reduced by separating the project into parts and only requiring a bond for the amount needed to complete each phase sequentially. All bonds must be secured before issuance of the notice to proceed. This has the same effect as reducing the penal amount of the bonding. Thus, a bond will be rolled over, with the bond terminated on the first part when it is completed, and started on the second part, etc. This

plan would place an administrative burden on the project. If additional firms participate, there is a chance of reduced project costs.

2. Clarify Surety Liability.

a. Background. Interviews conducted in the course of the study with contractors and sureties focused on the real concern in the surety community regarding the potential liability arising from their willingness to act as guarantors for HTW projects. This is consistent with the sureties' stand that they are bonding execution of plans and specs, not project performance. This is a perceived danger, not one based on any particular court ruling involving a surety guarantee situation. The perceived liability arises from potential third party injury claims and an ill-defined bond coverage completion period.

The surety's concern for liability results from the trend in cases arising from the monumental asbestos litigations where the courts have sought some deep pocket to compensate the injured party. In some cases, the courts have looked to insurance companies for such relief despite the insurance industry's disclaimer of any liability under their policies. The sureties view themselves as similar to these situations, with potential deep pockets from which injured parties may seek relief. They recognize that they are not insurers of such injury, but have little faith that the courts will take note of the distinction between insurer and guarantor if there is no other financially viable party against which a valid judgement can be executed.

The surety community, similar to the insurance industry, uses a secondary market to spread the risk associated with any particular bond arrangement. This secondary market has made it clear that it is not interested in sharing the risk associated with HTW projects. As a consequence, surety firms are more and more being called upon to undertake greater risk levels for such work. The insurance industry responded to the loss of its secondary insurers by withdrawing completely from the pollution liability coverage market. The surety industry, although still maintaining a reduced presence, does have certain members of its community which have followed the insurance industry lead and chosen to withdraw from providing bond coverage for such work.

Discussion with the surety industry raises two specific actions which may result in encouraging greater surety firm involvement in HTW work. The first action arises from the surety industry concern that it not be perceived as an insurer of third party injuries as a result of the bond. The surety performance bond is intended as a guarantee of contractor performance of the work. However, the bond form does not make any specific statement indicating that the surety bond is not intended to provide coverage for third party injury actions which might arise as a result of the contract work performed. The surety industry representatives have indicated that some statement on the performance bond form noting specifically that the bond is not available for coverage of third party injury suits could improve the secondary markets' perception of the risk for HTW projects and thereby improve the willingness of sureties to come into the marketplace and provide bonding for such work.

The second action would clarify, within the invitation or solicitation package, the time at which the performance bond completion requirements will be seen to have been accomplished. For the construction projects, the bond is available for the execution period of non-HTW construction plus the warranty period. It also is available to cover latent defects which may come to light following the end of the warranty period. There is nothing unusual about an HTW project that would require any different coverage period for its performance bond.

b. Define third party risk. Define in the contract which party has responsibility for specific risks. Transfers of risk, usually to the Government will probably be tested in the courts. The government will make explicit that Performance Bonds are not available for third party coverage. This may be addressed in two ways:

- modify the invitation or solicitation package with a disclaimer. This solution can be implemented by the procuring agency.
- modify the performance bond form to include a disclaimer. This would require the approval of the General Services Administration and a revision to the Federal Acquisition Regulation.

c. Surety Indemnification. Another concern that needs to be clarified is the extent of indemnification, if any, that the surety would be entitled to as a result of providing bonding on the contract. Indemnification for remedial action contractors performing HTW work is permitted by 42 U.S.C. 9619, provided that certain requirements are met. Sureties question the applicability of this indemnification to them. Since it has a major impact on the evaluation of the risk for bonding such work, clarification is needed to allow the industry to adequately quantify its potential long-term risk.

d. Define bond completion period. The government will define the point at which bond completion requirements have been fulfilled. This definition is within the authority of the procuring agencies.

Recently, in reply to a surety's concern over its right to indemnification in the event of a default of the bonded contractor, EPA advised that the surety would be eligible for indemnification if it elected to stand in the shoes of the defaulted contractor and complete performance of the remedial action. A final decision has not been made as to how this will apply to a surety that elects to take on responsibility for performance, but does so through its procuring another contractor. It is clear that this issue must be clarified with respect to the EPA superfund projects.

3. Indemnification Guidelines.

a. Background. There is no defined limit of coverage in EPA's interim guidance on indemnification that can be addressed with certainty by surety or contractor interests in assessing their potential risk. Likewise, the requirements that will need to be met to become eligible for the indemnification are not completely clear with respect to the contractor. They are even more ambiguous regarding the surety. These unknowns appear to exacerbate an already bad situation and provide no incentive for industry to move forward and commit themselves and their assets to support the program.

It is unclear from the data compiled in the study the effect that clarification of this issue will have on the surety and contractor community. DOD, which has not provided indemnification, for its work, has been able to

obtain adequate competition. In fact, there is some indication that the design and construction firms performing this work have structured themselves to limit the potential financial burden that might be associated with claims made against them in the absence of government indemnification. Once EPA has defined clearly the extent of its indemnification coverage and the requirements for obtaining it, the surety industry may well decide to provide bonding for EPA projects.

Regardless of the final decision on these issues, it is vital that the procedures for implementing the indemnification and for making claims be simplified as much as possible. At this time, there is no written statement of the procedure that will be followed if EPA receives a claim demand notice from an indemnified contractor. Also it is important that the extent of litigation costs and the timing for payment of such costs be defined. The industry is particularly concerned that litigation costs associated with injuries covered by indemnification not become a major drain on its financial assets. The industry is concerned that it will have to carry such costs over long periods of litigation and may well have to forego its recovery from the indemnification pool if a settlement is reached prior to final judgment on the case. It would seem advisable that the claims procedures include some early decision by the Government with respect to the Government taking over responsibility for defense or settlement of the claim.

b. Publish final indemnification guidelines. In completing the indemnification guidelines EPA should consider the following.

- explicitly describe the limits of coverage.
- define the claims procedure including claims for ongoing litigation costs.
- explicitly state under what conditions indemnification for surety firms is available.

4. Communications With the Industry.

a. Background. It is evident from the study that there is not a clear understanding among the surety community's members when advanced technology is used on HTW projects versus when conventional engineered construction is used. While there is no dispute that some HTW work can be

hazardous and complex, many projects use proven engineering principles which have a long history of use and acceptance. The extreme caution on the part of the surety industry, limited number of projects constructed and reluctance of sureties to become involved in HTW projects, all mesh together to cause the surety to assume each HTW project is the same despite the considerable variation in the types of projects. A number of projects are water supply construction alternatives that have no direct involvement with hazardous wastes.

b. Outreach Program. To overcome this lack of understanding, the EPA and the Corps could sponsor outreach efforts aimed at bringing both sureties and contractors together for purposes of discussing with industry technical aspects of different types of HTW projects. The agencies should also focus on the different site conditions and various contractual provisions that can distinguish one site from another and the technical aspects of using state of the art technology. While not eliminating all impediments to surety involvement, this could go a long way toward lowering the surety industry's reticence to participate on some of the less complex projects.

5. Limit Risk Potential.

a. Background. Sureties expressed particular concern that the Government not package its procurements, as design-build contracts including the use of performance specifications. In these cases, the surety is concerned that its risks are significantly enlarged from the situation it faces where design has been completed and the contractor need only construct the designed project in order to satisfy performance.

b. Clarify Contract Policy. The government should consider accepting design responsibility where performance specification requirements have been met. Performance specifications are used to some extent in all construction contracts. Incineration and ground water treatment contracts have a very large performance specification component and will remain that way. The government will continue to allow contractors to propose the complex equipment needed to meet specific site treatment requirements. Once the contractor has demonstrated that the equipment meets the performance specification, the

government could consider more explicitly reduction of the contractors liability as long as the performance specification continues to be met.

Where appropriate assume governmental responsibility for risk. Consider developing specific language that relieves the contractor of third party liability when meeting government-dictated performance specifications. Where performance specifications are provided to the contractor, and the government is solely responsible for the performance criteria selected, the government would accept responsibility for harm to the environment or third party resulting from the use of the performance criteria. An exception to this is where the contractor had knowledge of deficiencies in the performance criteria and failed to disclose such fact to the government.

c. Letters of Credit. Indications from the contractor community received during the study were that allowing the use of letters of credit will give new contractors and those with little experience a chance to get started in the HTW field and build a track record. The letter of credit is not without its detrimental aspects. They may prove to be financially draining to a contracting firm and limit a firm's ability to compete, much as surety bonds do in relation to the firms financial capacity. Again, one must weigh the benefits of increased participation against the chances of problems due to using less experienced firms. To pursue the issue further the agencies should explore the use of letters of credit in lieu of bonds by (1) reviewing the acceptability of individual sureties' use of letters of credit as assets, and (2) determining the feasibility and desirability of modifying the FAR to allow letters of credit.

C. LEGISLATIVE CHANGES

The path for change in the laws governing the hazardous and toxic waste area is long and complex. However, SARA is due to be reauthorized in 1991, so plans may be made for proposed changes to the future legislation. The EPA is the lead agency in the Superfund program and, thus, the agency to initiate activity in the legislative area. Possible changes mainly apply to the indemnification question. They include the following:

1. Increase the coverage for indemnification. Expand the types of coverage for liability indemnification and make these available to the surety as well as the contractor.
2. Establish a dollar cap on HTW liability.
3. Preempt state laws covering strict liability, and provide universal indemnity.
4. Amend CERCLA and/or Miller Act to specify that the purpose of performance bonds is to assure the government that the contractor will complete all contractual requirements and obligations. Performance bonds shall not be a vehicle for third party liability claims.

VI. RECOMMENDATIONS

Table 3 lists all options which have been considered as a result of the study. It represents in capsule form the pros and cons associated with each and provides an indication of the potential for increasing competition associated with implementation of the option. It also shows the specific actions which are recommended to be taken by EPA and the Corps as a means of increasing the availability of bonds for HTW work.

A. NON-LEGISLATIVE CHANGES

1. Issue Guidance on Use of Acquisition Planning for HTW.

The most effective strategies for alleviating the scarcity in bonding of the HTW program are those emphasizing improved acquisition planning, both formal and informal, additional risk sharing guidance which gives emphasis to the careful consideration of the bonding requirements, and contract type that will maximize qualified contractor competition. This particular alternative permits immediate implementation by the agencies concerned. It also places the burden on the contracting officer to make appropriate decisions on matters which may impact substantially the competitive climate for a particular invitation or solicitation. Each agency should have this guidance issued by an appropriate office within their headquarters for immediate implementation.

The steps in the recommended acquisition planning process are as follows:

- a. Determine appropriate wage rate categories for anticipated required labor.
- b. Determine contract type, e.g., service, construction, etc.
- c. Decide whether to subdivide the project into phases.
- d. Decide on the appropriate performance bonding level based on a risk analysis. Explicitely consider less than 100% bonding for construction contracts and greater than zero for service contracts.
- e. Decide on contract method (consideration of cost type contracts in addition to firm fixed price contracts).

The guidance should emphasize that the Miller, Davis-Bacon or Service contract act decisions must be made on their merits without consideration of cost or bonding factors involved.

EPA and Corps representatives should meet with Department of Labor to clarify the contract requirements of the HTW program and the relationship of these to the: Miller Act, Davis-Bacon Act and related regulations.

A program of continuing review of contract actions will insure continued competition in the contracting process.

Emphasis should be placed on appropriate acquisition planning which takes into consideration all factors that relate to the competitiveness of the contract situation.

2. Clarify Surety Liability Under SARA.

EPA should move immediately to clearly define the extent to which it will provide indemnification coverage to sureties on HTW projects. Extending indemnification by the Federal government to sureties should be explored when they fulfill these surety obligations by stepping in and completing the project for the defaulting contractor. Presently this area is not well defined. EPA should also institute, in conjunction with the Corps, an effort to revise the present FAR performance bond form to deal with the concerns raised by sureties on potential for third party actions looking to the bond for injury judgement recovery. A task force composed of appropriate personnel from both agencies should be established to work on having this revision instituted for HTW projects. At the same time, each agency should require its internal procurement elements to assure that wording is included in invitations and solicitations disclaiming any interest by the Government in having the performance bond being available to cover third party injury claims.

3. Indemnification Guidelines.

A new indemnification clause will be implemented by the Corps which will assure the indemnification of HTW contractors in the event that they are not able to secure adequate insurance for firm fixed price contracts. The indemnification will extend to third party liability by the surety.

4. Communication with Industry.

EPA and the Corps should jointly establish an outreach program designed to discuss with the surety and construction industry as to the nature of the HTW program, the realities of the technology being employed on remedial action projects and the contract clause addressing risk. The joint working group, including procurement and PARC representatives, would seek out prominent industry members and associations and urge that a dialogue be initiated on a periodic basis to address specific concerns of the industry stemming from bonding particular types of HTW projects.

5. Limit Risk Potential.

Each agency should immediately issue guidance to assist contracting officers in making their decisions on the amount of risk for the government to assume in the issuance of performance bonds. The guidance should emphasize that performance specifications and design-build contracts should be used only when necessary and solicitations should be clear on what responsibilities the government assumes for the technical criteria of the project. Additionally, the contracting officer should be urged to assure that the contract be structured to reduce bonding requirements, where the risk of non-performance to the government is minimal which can have a detrimental effect on competition from qualified firms. Guidance should emphasize protecting governments' interests. These include ensuring that the contractor performs as promised and all contractors, capable of performing, remain eligible. The agencies should seek approval of a contract clause which will clearly indicate that in professional specifications the government is responsible for establishment of the level of cleanup and the contractor is responsible for the method and means used to achieve this level.

A joint working group should be established between the Corps and EPA to better define the implications associated with proposing a recommendation for a FAR revision to permit the acceptance of letters of credit in lieu of a surety bond.

B. LEGISLATIVE CHANGES

Recommend EPA consider proposing legislative changes for indemnification and third party liability. Analysis of the comments received during the course of this study indicates that legislative changes in these areas will

substantially reduce many of the concerns of the surety industry and contractor community in being involved with Superfund remedial action work.

ENDNOTES

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APPENDICES

Appendix A:

List of Contacts

APPENDIX A

HTW BONDING STUDY

List of Contacts

| Name | Organization | Address | |
|------------------|-------------------------------|---------------|----|
| John Steller | Ill. Dept land Pollution ctrl | Springfield | IL |
| Lynn Schubert | American Ins. Assn | Washington | DC |
| Brian Deery | Assn. Genl. Contr/Amer | Washington | DC |
| Stuart Binstock | Assn. Genl. Contr/Amer. | Washington | DC |
| Dave Johnson | Assn. Genl. Contr/Amer. | Washington | DC |
| Jack Mahon | CECC-C OCE | Washington | DC |
| Greg Noonan | CECC-C OCE | Washington | DC |
| Chuck Schroer | CEMP-C OCE | Washington | DC |
| Walter Norko | CEMP-CP OCE | Washington | DC |
| Sara Bunch | CEMP-RS OCE | Washington | DC |
| Jim Gibson | CEMP-RS OCE | Washington | DC |
| Paul Lancer | CEMP-RS OCE | Washington | DC |
| Noel Urban | CEMP-RS OCE | Washington | DC |
| Gene Jones | CEMRD-CT | Omaha | NE |
| Bruce Anderson | CEMRD-OC | Omaha | NE |
| Norm Spero | CEMRD-OC | Omaha | NE |
| August Spallo | CEMRK-OC | Kansas City | MO |
| Joan Chapman | CEMRK-CT | Kansas City | MO |
| Steven Switzer | CEMRK-CT-K | Kansas City | MO |
| Frank Bader | CEMRK-ED-T | Kansas City | MO |
| Lee Fuerst | CEMRK-ED-T | Kansas City | MO |
| Donald Robinson | CEMRO-CT | Omaha | NE |
| Cathy Vanetta | CEMRO-CT | Omaha | NE |
| Kirk Williams | CEMRO-CT | Omaha | NE |
| Stanley Karlock | CEMRO-ED-E | Omaha | NE |
| Gary Henninger | CEMRO-OC | Kansas City | Mo |
| Ann Wright | CEMRO-OC | Omaha | NE |
| Rick Heinz | CEORD-RS | Cincinatti | OH |
| Mary Melhorn | CEPR-ZA | Washington | DC |
| George Wischman | CEPR-ZA | Washington | DC |
| Richard Corrigan | CH2M Hill | Washinton | DC |
| S. McCallie | CH2M Hill | Denver | CO |
| Jim Lane | Corroon & Black | Madison | WI |
| Peter Bond | Davy Corp | San Francisco | CA |
| Mike Yates | Ebasco Constr. Inc. | Lyndhurst | NJ |
| William Bodie | Environmental Bus. Assn. | Washington | DC |
| Paul Nadeau | EPA HQ | Washington | DC |
| Tom Whalen | EPA HQ | Washington | DC |
| Carl Edlund | EPA Reg Off 6 (Dallas) | Dallas | TX |
| Tom Bosley | Fidelity & Deposit Co. | Baltimore | MD |
| John Herguth | Foster Wheeler Corp. | Clinton | NJ |
| Terre Belt | Hazardous Waste Action Co | Washington | DC |
| Joe Turner | Huntington Dist. | Huntington | WV |
| John Daniel | IT Corp | Washington | DC |

| Name | Organization | Address | |
|-------------------|--------------------------------|-------------|----|
| Phil Deakin | IT Corp | Washington | DC |
| Norman Delbridge | Jones Gp. | Springfield | VA |
| Joseph Smith | Jos.J Smith & Assts. | Greenwood | IN |
| Craig Muetter | Louisville Dist. | Louisville | KY |
| James Malony | Marsh & McLennan | Columbia | SC |
| Myra Tobin | Marsh & McLennan | N.Y.C. | NY |
| B. De Castro | Nat. Solid Wastes Mgmt. Assn. | Washington | DC |
| Barbara Haugen | Nat.Assn.Ins. Brokers | Washington | DC |
| Ed Putnam | New Jersey Environmental Dept. | Trenton | NJ |
| Jim Walker | O H Materials Corp | Finley | OH |
| Walter Youngblade | O H Materials Corp. | Finley | OH |
| Bruce Miller | Perland Env. Tech. Inc | Burlington | MA |
| Michael Quinn | Risk Science Intl. Inc. | Washington | DC |
| Dennis Wine | Surety Ass. of Amer. | Iselin | NJ |
| James Feeley | Texas Water Comm. | Austin | TX |
| E. Schutt | W.R. Grace/Grace Env. | St. Joseph | MI |

Appendix B:

Sample Forms

AFFIDAVIT OF INDIVIDUAL SURETY
(See Instructions on Reverse)

FORM APPROVED
O.M.B. No. 29-80030

STATE OF _____

COUNTY OF _____

} SS: _____

I, the undersigned, being duly sworn, depose and say that I am one of the sureties to the attached bond; that I am a citizen of the United States (or a permanent resident of the place where the contract and bond are executed as provided in paragraph 3 of the Instructions on reverse), and of full age and legally competent; that I am not a partner in any business of the principal on the bond or bonds on which I appear as surety; that the information herein below furnished is true and complete to the best of my knowledge. This affidavit is made to induce the United States of America to accept me as surety on the attached bond.

1. NAME (First, middle, last) (Type or print)

2. HOME ADDRESS (Number, Street, City, State, ZIP Code)

3. TYPE AND DURATION OF OCCUPATION

4. NAME OF EMPLOYER (If self-employed, so state)

5. BUSINESS ADDRESS (Number, Street, City, State, ZIP Code)

6. TELEPHONE NO:

HOME—

BUSINESS—

7. THE FOLLOWING IS A TRUE REPRESENTATION OF MY PRESENT ASSETS, LIABILITIES, AND NET WORTH AND DOES NOT INCLUDE ANY FINANCIAL INTEREST I HAVE IN THE ASSETS OF THE PRINCIPAL ON THE ATTACHED BOND:

a. Fair value of solely owned real estate* \$ _____

b. All mortgages or other encumbrances on the real estate included in Line a _____

c. Real estate equity (subtract Line b from Line a) _____

d. Fair value of all solely owned property other than real estate* _____

e. Total of the amounts on Lines c and d _____

f. All other liabilities owing or incurred not included in Line b _____

g. Net worth (subtract Line f from Line e) \$ _____

*Do not include property exempt from execution and sale for any reason. Surety's interest in community property may be included if not so exempt.

8. LOCATION AND DESCRIPTION OF REAL ESTATE OF WHICH I AM SOLE OWNER, THE VALUE OF WHICH IS INCLUDED IN LINE (a), ITEM 7 ABOVE

Amount of assessed valuation of above real estate for taxation purposes: _____

9. DESCRIPTION OF PROPERTY INCLUDED IN LINE (d), ITEM 7 ABOVE (List the value of each category of property separately)

10. ALL OTHER BONDS ON WHICH I AM SURETY (State character and amount of each bond; if none, so state)

11. SIGNATURE

12. BOND AND CONTRACT TO WHICH THIS AFFIDAVIT RELATES
(Where appropriate)

SUBSCRIBED AND SWORN TO BEFORE ME AS FOLLOWS:

DATE OATH ADMINISTERED
MONTH DAY YEAR

CITY

STATE (Or other jurisdiction)

NAME AND TITLE OF OFFICIAL ADMINISTERING OATH
(Type or print)

SIGNATURE

MY COMMISSION
EXPIRES

Official
Seal

CERTIFICATE OF SUFFICIENCY

I Hereby Certify, That the surety named herein is personally known to me; that, in my judgment, said surety is responsible, and qualified to act as such; and that, to the best of my knowledge, the facts stated by said surety in the foregoing affidavit are true.

NAME (Type/written)

SIGNATURE

OFFICIAL TITLE

ADDRESS (Number, Street, City, State, ZIP Code)

INSTRUCTIONS

1. This form shall be used whenever sureties on bonds to be executed in connection with Government contracts are individual sureties, as provided in governing regulations (see 41 CFR 1-10.203, 1-16.801, 101-45.3). There shall be no deviation from this form except as so authorized (see 41 CFR 1-1.009, 101-1.110).

2. A corporation, partnership, or other business association or firm, as such, will not be accepted as a surety, nor will a partner be accepted as a surety for co-partners or for a firm of which he is a member. Stockholders of a corporate principal may be accepted as sureties provided their qualifications as such are independent of their stockholdings therein. In arriving at the net worth figure in Item 7 on the face of this affidavit an individual surety will not include any financial interest he may have in the assets of the principal on the bond which this affidavit supports.

3. An individual surety shall be a citizen of the United States, except that if the contract and bond are executed in any foreign country, the Commonwealth of Puerto Rico, the Virgin Islands, the Canal Zone, Guam, or any other territory or possession of the United States, such surety need only be a perma-

nent resident of the place of execution of the contract and bond.

4. The individual surety shall show net worth in a sum not less than the penalty of the bond by supplying the information required on the face hereof, under oath before a United States commissioner, a clerk of a United States Court, or notary public, or some other officer having authority to administer oaths generally. If the officer has an official seal, it shall be affixed, otherwise the proper certificate as to his official character shall be furnished.

5. The certificate of sufficiency shall be signed by an officer of a bank or trust company, a judge or clerk of a court of record, a United States district attorney or commissioner, a postmaster, a collector or deputy collector of internal revenue, or any other officer of the United States acceptable to the department or establishment concerned. Further certificates showing additional assets, or a new surety, may be required to assure protection of the Government's interest. Such certificates must be based on the personal investigation of the certifying officer at the time of the making thereof, and not upon prior certifications.

BID BOND (See Instructions on reverse)

DATE BOND EXECUTED (Must not be later than bid opening date)

PRINCIPAL (Legal name and business address)

TYPE OF ORGANIZATION ("X" one)

☐ INDIVIDUAL ☐ PARTNERSHIP
☐ JOINT VENTURE ☐ CORPORATION

STATE OF INCORPORATION

SURETY(IES) (Name and business address)

| PERCENT OF BID PRICE | PENAL SUM OF BOND | | | | BID IDENTIFICATION | |
|----------------------|----------------------|-------------|------------|-------|--|----------------|
| | AMOUNT NOT TO EXCEED | | | | BID DATE | INVITATION NO. |
| | MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | | |
| | | | | | FOR (Construction, Supplies or Services) | |

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal — (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure so to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL

| | | | |
|-------------------------------|--------|--------|----------------|
| Signature(s) | 1. | 2. | Corporate Seal |
| | (Seal) | (Seal) | |
| Name(s) & Title(s) (Typed) | 1. | 2. | |
| | | | |

INDIVIDUAL SURETIES

| | | |
|--------------------|--------|--------|
| Signature(s) | 1. | 2. |
| | (Seal) | (Seal) |
| Name(s) (Typed) | 1. | 2. |
| | | |

CORPORATE SURETY(IES)

| | | | | | | |
|----------|-------------------------------|----|----|---------------|-----------------|----------------|
| SURETY A | Name & Address | | | STATE OF INC. | LIABILITY LIMIT | Corporate Seal |
| | | | | | \$ | |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |

CORPORATE SURETY(IES) (Continued)

| | | | | | | |
|-----------------|-------------------------------|----|----|---------------|-----------------------|-----------------------|
| SURETY B | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY C | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY D | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY E | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY F | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY G | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed _____ dollars).

4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed herein. Where more than one corporate surety is involved, their names and addresses shall appear

in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)". In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties

(b) Where individual sureties are involved, two or more responsible persons shall execute the bond. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require these sureties to furnish additional substantiating information concerning their financial capability.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

6. Type the name and title of each person signing this bond in the space provided.

7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror"

| PERFORMANCE BOND <i>(See Instructions on reverse)</i> | DATE BOND EXECUTED <i>(Must be same or later than date of contract)</i> | | | | | | | | | | | | | | | | |
|---|--|-------------------|-------|--|--|------------|-------------|------------|-------|--|--|--|--|---------------|--------------|--|--|
| PRINCIPAL <i>(Legal name and business address)</i> | TYPE OF ORGANIZATION <i>("X" one)</i> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> JOINT VENTURE </div> <div> <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> CORPORATION </div> </div> STATE OF INCORPORATION | | | | | | | | | | | | | | | | |
| SURETY(IES) <i>(Name(s) and business address(es))</i> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="4" style="text-align: center;">PENAL SUM OF BOND</th> </tr> <tr> <td style="width: 25%;">MILLION(S)</td> <td style="width: 25%;">THOUSAND(S)</td> <td style="width: 25%;">HUNDRED(S)</td> <td style="width: 25%;">CENTS</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">CONTRACT DATE</td> <td style="width: 50%;">CONTRACT NO.</td> </tr> <tr> <td> </td> <td> </td> </tr> </table> | PENAL SUM OF BOND | | | | MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | | | | | CONTRACT DATE | CONTRACT NO. | | |
| PENAL SUM OF BOND | | | | | | | | | | | | | | | | | |
| MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| CONTRACT DATE | CONTRACT NO. | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has entered into the contract identified above.

THEREFORE:

The above obligation is void if the Principal –

(a)(1) Performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of the contract during the original term of the contract and any extensions thereof that are granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and (2) perform and fulfills all the undertakings, covenants, terms conditions, and agreements of any and all duly authorized modifications of the contract that hereafter are made. Notice of those modifications to the Surety(ies) are waived.

(b) Pays to the Government the full amount of the taxes imposed by the Government, if the said contract is subject to the Miller Act, (40 U.S.C. 270a-270e), which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished.

WITNESS:

The Principal and Surety(ies) executed this performance bond and affixed their seals on the above date.

| PRINCIPAL | | | | |
|--------------------------------------|----------------|--------|----|-----------------|
| Signature(s) | 1. | | 2. | |
| | | (Seal) | | (Seal) |
| Name(s) & Title(s) <i>(Typed)</i> | 1. | | 2. | |
| | | | | |
| INDIVIDUAL SURETY(IES) | | | | |
| Signature(s) | 1. | | 2. | |
| | | (Seal) | | (Seal) |
| Name(s) <i>(Typed)</i> | 1. | | 2. | |
| | | | | |
| CORPORATE SURETY(IES) | | | | |
| SURETY A | Name & Address | | | STATE OF INC. |
| | | | | LIABILITY LIMIT |
| | | | | \$ |
| Signature(s) | 1. | | 2. | |
| | | | | |
| Name(s) & Title(s) <i>(Typed)</i> | 1. | | 2. | |
| | | | | |
| Corporate Seal | | | | |

CORPORATE SURETY(IES) (Continued)

| | | | | | |
|-----------------|----------------------------|----------|---------------|-----------------------|-----------------------|
| SURETY B | Name & Address | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. 2. | | | |
| SURETY C | Name & Address | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. 2. | | | |
| SURETY D | Name & Address | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. 2. | | | |
| SURETY E | Name & Address | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. 2. | | | |
| SURETY F | Name & Address | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. 2. | | | |
| SURETY G | Name & Address | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. 2. | | | |

| | | |
|---------------------|--------------------------------|--------------------|
| BOND PREMIUM | RATE PER THOUSAND \$ | TOTAL \$ |
|---------------------|--------------------------------|--------------------|

INSTRUCTIONS

1. This form is authorized for use in connection with Government contracts. Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorization person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE

SURETY(IES)" In the space designated "SURETY(IES)" on the face of the form insert only the letter identification of the sureties.

(b) Where individual sureties are involved, two or more responsible persons shall execute the bond. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require these sureties to furnish additional substantiating information concerning their financial capability.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

5. Type the name and title of each person signing this bond in the space provided.

| PAYMENT BOND <i>(See Instructions on reverse)</i> | DATE BOND EXECUTED (Must be same or later than date of contract) | | | | | | | | | | | | | | | | |
|---|--|-------------------|-------|--|--|------------|-------------|------------|-------|--|--|--|--|---------------|--------------|--|--|
| PRINCIPAL (Legal name and business address) | TYPE OF ORGANIZATION ("X" one) <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> JOINT VENTURE </div> <div> <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> CORPORATION </div> </div> STATE OF INCORPORATION | | | | | | | | | | | | | | | | |
| SURETY(IES) (Name(s) and business address(es)) | <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <th colspan="4">PENAL SUM OF BOND</th> </tr> <tr> <td style="width: 25%;">MILLION(S)</td> <td style="width: 25%;">THOUSAND(S)</td> <td style="width: 25%;">HUNDRED(S)</td> <td style="width: 25%;">CENTS</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td style="width: 50%;">CONTRACT DATE</td> <td style="width: 50%;">CONTRACT NO.</td> </tr> <tr> <td> </td> <td> </td> </tr> </table> | PENAL SUM OF BOND | | | | MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | | | | | CONTRACT DATE | CONTRACT NO. | | |
| PENAL SUM OF BOND | | | | | | | | | | | | | | | | | |
| MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| CONTRACT DATE | CONTRACT NO. | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The above obligation is void if the Principal promptly makes payment to all persons having a direct relationship with the Principal or a subcontractor of the Principal for furnishing labor, material or both in the prosecution of the work provided for in the contract identified above, and any authorized modifications of the contract that subsequently are made. Notice of those modifications to the Surety(ies) are waived.

WITNESS:

The Principal and Surety(ies) executed this payment bond and affixed their seals on the above date.

| PRINCIPAL | | | | |
|----------------------------|----------------------------|------------------|----------------|----------------|
| Signature(s) | 1. (Seal) | 2. (Seal) | Corporate Seal | |
| Name(s) & Title(s) (Typed) | 1. | 2. | | |
| INDIVIDUAL SURETY(IES) | | | | |
| Signature(s) | 1. (Seal) | 2. (Seal) | | |
| Name(s) (Typed) | 1. | 2. | | |
| CORPORATE SURETY(IES) | | | | |
| SURETY A | Name & Address | 1. | 2. | Corporate Seal |
| | Signature(s) | 1. | 2. | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | |

CORPORATE SURETY(IES) (Continued)

| | | | | | | |
|-----------------|-------------------------------|----|----|---------------|-----------------------|-----------------------|
| SURETY B | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY C | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY D | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY E | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY F | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |
| SURETY G | Name & Address | | | STATE OF INC. | LIABILITY LIMIT \$ | <i>Corporate Seal</i> |
| | Signature(s) | 1. | 2. | | | |
| | Name(s) & Title(s) (Typed) | 1. | 2. | | | |

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, is used when a payment bond is required under the Act of August 24, 1935, 49 Stat. 793 (40 U.S.C. 270a-270e). Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of authorized sureties and must act within the limitation listed therein. (b) If more than one corporate surety is involved, their names and addresses shall appear

in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)". In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, two or more responsible persons shall execute the bond. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require these sureties to furnish additional substantiating information concerning their financial capability.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction regarding adhesive seals.

5. Type the name and title of each person signing this bond in the space provided.