Audit Report

OFFICE OF THE INSPECTOR GENERAL

CONTRACTING SELECTION FOR THE DEVELOPMENT OF THE RANGE RULE RISK METHODOLOGY

Report No. 98-026 November 24, 1997

Department of Defense

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Acronyms

AEC	Army Environmental Center
OECert	Ordnance and Explosives Cost-Effectiveness Risk Tool
R3M	Range Rule Risk Methodology

INSPECTOR GENERAL
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November 24, 1997

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY
DEPUTY UNDER SECRETARY OF DEFENSE (ENVIRONMENTAL SECURITY)
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT AND COMPTROLLER)
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Contractor Selection for the Development of the Range Rule Risk Methodology (Report No. 98-026)

We are providing this report for information and use. This audit was requested by Congressman Robert E. Cramer who asked for a review of Government use of the Ordnance and Explosives Cost-Effectiveness Risk Tool and contractor selection for the development of the Range Rule Risk Methodology. Because this report contains no recommendations, no written comments on a draft version were required, and none were received.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Joseph P. Doyle, Audit Program Director, at (703) 604-9348 (DSN 664-9348) or Ms. Deborah L. Culp, Audit Project Manager, at (703) 604-9335 (DSN 664-9335). See Appendix B for the report distribution. The audit team members are listed inside the back cover.

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Office of the Inspector General, DoD

Report No. 98-026 **November 24, 1997**
(Project No. 7CK-5039)

Contractor Selection for the Development of the Range Rule Risk Methodology

Executive Summary

Introduction. This audit was requested by Congressman Robert E. Cramer who asked the Inspector General, DoD, to review Government use of the Ordnance and Explosives Cost-Effectiveness Risk Tool and contractor selection for the development of the Range Rule Risk Methodology.

The U.S. Army Corps of Engineers, Huntsville Engineering and Support Center, Huntsville, Alabama, awarded QuantiTech, Inc. a contract to develop the Ordnance and Explosives Cost-Effectiveness Risk Tool. QuantiTech, Inc. was to develop a rational, analytical methodology for ranking ordnance ranges for remediation of unexploded ordnance based on life-cycle cost and programmatic and public risks.

The DoD Explosives Safety Board is responsible for the development of the DoD Range Rule. The U.S. Army, specifically the Army Environmental Center, Aberdeen Proving Ground, Maryland, is the designated lead agent for drafting the rule. The Range Rule will be the DoD regulation that specifies a process for initiating and conducting response actions on closed, transferred, and transferring military ranges. The Range Rule Risk Methodology (part of the DoD Range Rule) currently being developed, will establish a standardized technical method to evaluate ranges and to determine what responses are necessary to protect human health and the environment.

Audit Objective. The audit objective was to determine whether the Government appropriately used the Ordnance and Explosives Cost-Effectiveness Risk Tool. We also reviewed the justification used to select the contractor to develop the Range Rule Risk Methodology. The audit was also to review the management control program as it applied to the other objectives. We did not review the management control program because the scope of the audit was limited to the two contracts mentioned in the congressional request. See Appendix A for a discussion of the audit process and prior coverage.

Audit Results. We determined that the Government appropriately used the Ordnance and Explosives Cost-Effectiveness Risk Tool. The contract for the development of the Ordnance and Explosives Cost-Effectiveness Risk Tool gave the Government unlimited rights in technical data and software for all items developed with Government funds. Also, the Government did not give away the contractor's intellectual property. We determined that contractor selection for the development of the Range Rule Risk Methodology was consistent with applicable acquisition rules. See Part I for a discussion of the audit results.

Management Comments. None required.

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Part I - Audit Results

Audit Background

Congressman Robert E. Cramer requested that we review the Government's rationale of providing the Ordnance and Explosives Cost-Effectiveness Risk Tool (OECert), developed by a Small Business Administration certified 8(a) firm under a Government contract, to another contractor for its use and further development. An 8(a) firm is defined as one that is owned and controlled by socially and economically disadvantaged individuals. Congressman Cramer also requested that we review the contractor selection process for providing technical support for the development of the Range Rule Risk Methodology (R3M).

OECert. QuantiTech, Inc. developed the OECert on a contract with the U.S. Army Corps of Engineers, Huntsville Engineering and Support Center, Huntsville, Alabama. QuantiTech, Inc. was to develop a rational, analytical methodology for ranking ordnance ranges for remediation of unexploded ordnance based on life-cycle cost and programmatic and public risks. The cost reimbursable contract was awarded April 1993 in response to a Broad Agency Announcement. The contract was not an 8(a) set aside, and QuantiTech, Inc. was not 8(a) certified until January 1995. The final version of the OECert was issued in August 1995. The Army Corps of Engineers provided copies of the OECert to other Government agencies who, in turn, provided the model to other contractors involved in unexploded ordnance projects.

Range Rule Risk Methodology. The purpose of R3M is to set forth the technical method that the DoD will use to support its Range Rule. The Range Rule will be the regulation on how the DoD will respond to ordnance clean up at its ranges. The R3M is being drafted by the Army Environmental Center (AEC), Aberdeen Proving Ground, Maryland. PRC Environmental Management, Inc. (PRC EMI) is providing technical support to AEC in response to a Technical Direction Letter issued by the Naval Explosive Ordnance Disposal Technology Division, Indian Head, Maryland. The Technical Direction Letter specified a level of effort not to exceed $145,000, however, funding was subsequently raised to $220,000.

Audit Objectives

The audit objective was to determine whether the Government appropriately used the OECert developed by a contractor. Also, we reviewed the justification used to select the contractor to develop R3M. An additional objective was to review the management control program as it applied to the other objectives. We did not review the management control program because the scope of the audit was limited to the two contracts mentioned in the congressional request. See Appendix A for a discussion of the audit process and prior coverage.

Government Use of OECert

The Government appropriately used the OECert developed by QuantiTech, Inc. The contract awarded to develop the OECert gave the Government unlimited rights in technical data and software for all items developed with Government funds. Also, the Government did not give away the contractor's intellectual property. The Government has the right to disseminate the OECert model to any person, agency, or organization deemed necessary.

Use of OECert

The Army Corps of Engineers, Huntsville Engineering and Support Center, appropriately disseminated the Government-owned OECert model to be used by others for Government purposes. The Army Corps of Engineers furnished copies of the OECert to other Government agencies involved in unexploded ordnance detection and remediation. The OECert was also given to contractors involved in Government funded unexploded ordnance projects.

Data Rights

The contract with QuantiTech, Inc. for the OECert gave the Government unlimited rights in technical data and computer software that was generated during development of the model. The OECert contract contained the "Rights in Technical Data and Computer Software (Oct 1988)" clause. The clause states that the Government is entitled to and will receive unlimited rights in technical data pertaining to an item, component, or process that has been developed exclusively with Government funds. The Government also has unlimited rights in manuals or instructional materials prepared or required to be delivered that are necessary for installation, operation, or training purposes. The clause also gives the Government unlimited rights to computer software developed during the performance of the contract. The final OECert report and accompanying software did not contain any restrictive markings that would indicate that the contractor's product contained any proprietary data or software. The Government had no restrictions on the dissemination of data or software developed under the contract with QuantiTech, Inc.

Intellectual Property

The Government did not unfairly give away any intellectual property of QuantiTech, Inc. The OECert was developed using standard risk evaluation techniques, and no new risk evaluation theories were developed. U.S. Army Corps of Engineers, Huntsville Engineering and Support Center personnel indicated that the basic premise of the OECert was to apply operations research

modeling concepts to the area of unexploded ordnance risk evaluation. Corps of Engineers personnel stated that there were no new theories developed or applied in the OECert model. Further, Office of Inspector General, DoD, Quantitative Methods Division personnel reviewed the final OECert report and concluded that the OECert model concept is based on relatively standard approaches for computing encounter probabilities and area sweep rates. The idea of providing modified equations for each of several different operations (in this case, different site uses) is an established military operations research technique, one that is applied in any assessment of a multimission system. Quantitative Methods Division personnel further stated that conceptually, many operations research analysts might adopt such an approach to the problem. The general nature of the conceptual approach, and its similarity to antisubmarine warfare search and minefield sweeping problems, would seem to argue against the OECert being an example of unique intellectual property.

Summary

The Government funded the total cost of developing the OECert model so it could be used as a tool for the remediation of unexploded ordnance at military ranges. The Government had unlimited rights in all technical data and computer software developed under the contract. The contractor did not claim that it had furnished the Government any proprietary data with the contract deliverables. The contract under which the OECert was developed was in response to a Broad Agency Announcement, open to all competition, and was not a small business or 8(a) set-aside. At the time of the award, QuantiTech, Inc. was not 8(a) certified by the Small Business Administration. Regardless, 8(a) contractors are not granted special rights or privileges in the retention of data rights for which the Government has paid. The QuantiTech model did not develop or apply new theories, instead it is based on relatively standard approaches for computing encounter probabilities and sweep rates. The Government acted correctly in the distribution of the OECert model. It is unreasonable to expect restriction of OECert distribution for any legitimate Government purpose.

Contractor Selection for R3M

The Army did not violate the Competition in Contracting Act by placing an order with the Navy for technical support for the development of the R3M. The Navy could have placed an order for the task of providing technical support for the development of the R3M on any existing open contract with a scope of work commensurate with the work to be performed. The Navy was not required to compete the award. The Navy correctly awarded the work to provide technical support for the development of the R3M to a qualified contractor.

Contractor Selection

The AEC personnel requested the Naval Explosive Ordnance Disposal Technology Division (Navy) to provide technical support for the development of the R3M. The Navy had an existing cost plus fixed-fee level of effort contract with PRC EMI for efforts pertaining to unexploded ordnance clearance technology. The work to be performed on the R3M was within the scope of work of the PRC EMI contract. The Navy, at the direction of AEC, issued a Technical Direction Letter not to exceed $145,000 to PRC EMI to provide the technical support for R3M.

Extent of Competition

The work effort for providing technical support for the development of the R3M was not openly competed. The AEC project manager indicated that he judgmentally selected a Navy contractor (PRC EMI) to perform the work for the R3M. To confirm his selection, the AEC project manager subsequently prepared an internal selection matrix on which he ranked PRC EMI, QuantiTech, Inc., and one other contractor for the development of the R3M. Matrix factors included product quality, R3M history, model knowledge (Navy, OECert, Ft. Meade), survey methods knowledge, multiuser integration, multi-service link-ups, contracting capacity, availability, costs, AEC history, and procurement cycle. The project manager stated that he independently prepared the one-page matrix, and did not solicit information from any contractor representatives or Government agents. All contractors were ranked equal on product quality, contracting capability, availability, and costs. The AEC project manager did not have documentation to support the criteria or the scores contained in the matrix. However, based on his internal contractor ranking matrix, he reconfirmed his decision to select PRC EMI for the effort. The AEC transferred funds to the Navy to provide technical support for the development of the R3M, and verbally requested that PRC EMI perform the work. Because the PRC EMI contract was available, and the scope of work would support development efforts for R3M, the Navy was not obligated to compete the technical effort for R3M.

Summary

The decision to award the task of providing technical support for the development of the R3M without competition was correct. Contracts were available for development of R3M without having to obtain full and open competition, and the project manager judgmentally selected PRC EMI to perform the work. The work efforts for the task were within the scope of the contract selected.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

Work Performed. We reviewed contract DACA87-93-C-0036 for the development of the OECert. This contract was awarded in FY 1993 and valued at about $1.1 million. We also reviewed Technical Direction Letter 0007-A issued in FY 1996 on contract N00174-96-C-0075, valued at $145,000 and subsequently increased to $220,000, for the development of the R3M. We reviewed contract documentation for FYs 1993 to 1997. During the audit, we interviewed DoD personnel involved with the study and remediation of unexploded ordnance, and personnel involved with procurement and administration of the reviewed contracts. We also reviewed the use and disposition of contract deliverables.

We did not review the management control program because the scope of the audit was limited to the two contracts in the congressional request.

Technical Assistance. Operations research analysts from the Quantitative Methods Division, Analysis, Planning and Technical Support Directorate of the Inspector General, DoD, provided technical assistance related to the modeling concepts contained in the OECert.

Audit Period and Standards. We performed this economy and efficiency audit from May through October 1997 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. The audit did not rely on computer-processed data or statistical sampling procedures.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available on request.

Prior Coverage

Office of Inspector General, DoD, Report, "Review of Policies and Procedures Guiding the Cleanup of Ordnance on Department of Defense Lands," November 1994. The evaluation report concludes that, among other things, ordnance detection and removal technologies observed were simplistic, labor-intensive, and primitive. The report states that technology is needed that is quick and economical in identifying and removing unexploded ordnance and

explosive waste. The report recommended that the "Deputy Under Secretary of Defense (Environmental Security) should direct the Department of Defense Explosive Safety Board to incorporate risk-based standards, *similar* [emphasis added] to those being developed using the U.S. Army Corps of Engineers' Quantitech [sic] Model, in their unexploded ordnance cleanup standards." No comments were received to the report.

Appendix B. Report Distribution

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Under Secretary of Defense (Comptroller)
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Assistant Secretary of the Army (Installations, Logistics, and Environment)
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    Commander, Army Environmental Center
Auditor General, Department of the Army
Commander, Army Corps of Engineers
  Commander, Huntsville Engineering and Support Center, Huntsville, AL

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Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy
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Commander, Naval Explosive Ordnance Disposal Technology Division,
  Indian Head, MD

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Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on National Security
House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight

Honorable Robert E. Cramer, U.S. House of Representatives

Audit Team Members

The Contract Management Directorate, Office of the Assistant Inspector General for Auditing, DoD, produced this report.

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