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RADIOACTIVE MATERIAL CONTAINMENT BAGS

Report No. D-2000-108

March 22, 2000

Office of the Inspector General
Department of Defense

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Acronyms

DAS	Defense Apparel Services
NAVICP	Naval Inventory Control Point
PVC	Polyvinyl Chloride
RMC	Radioactive Material Containment



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2885

March 22, 2000

MEMORANDUM FOR DIRECTOR, DEFENSE LOGISTICS AGENCY
NAVAL INSPECTOR GENERAL

SUBJECT: Audit Report on Radioactive Material Containment Bags
(Report No. D-2000-108)

We are providing this report for your information and use. The audit was requested by Senator Joseph I. Lieberman to review the Navy's actions on three contracts for radioactive material containment bags. Senator Lieberman also requested the audit results by the end of March 2000. Because this report contains no recommendations, no written comments were required, and none were received. Therefore, we are publishing this report in final form.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Joseph P. Doyle at (703) 604-9348 (DSN 664-9348) (jdoyle@dodig.osd.mil) or Mr. Michael J. Tully at (703) 604-9347 (DSN 664-9347) (mtully@dodig.osd.mil). See Appendix B for the report distribution. The audit team members are listed inside the back cover.

A handwritten signature in black ink, reading "Robert J. Lieberman".

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. D-2000-108
(Project No. D1999-D000CK-0098)

March 22, 2000

Radioactive Material Containment Bags

Executive Summary

Introduction. The audit was requested by Senator Joseph I. Lieberman based on allegations made by a contractor, Defense Apparel Services, about the Navy's actions on three contracts for radioactive material containment bags. The 1996 contracts between the Naval Inventory Control Point, Mechanicsburg, Pennsylvania, and Defense Apparel Services were valued at approximately \$2.5 million.

Objectives. The audit objective was to determine whether the Navy properly administered the contracts for radioactive material containment bags. Additionally, the audit determined whether the Navy ordered excessive inventory of polyvinyl chloride radioactive material containment bags and allowed the use of a defective material.

Results. The allegations were not valid. The Navy properly administered the three contracts with Defense Apparel Services for polyvinyl chloride bags. The Navy used the same quality assurance and inspection procedures for Defense Apparel Services and another polyvinyl chloride bag manufacturer. The Navy demand for polyvinyl chloride bags justified the number of bags that the Naval Inventory Control Point ordered from Defense Apparel Services in 1996. The Navy had not specified, accepted, or used polyvinyl chloride material in radioactive material containment bags that had inherent defects.

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Background

Senator Joseph I. Lieberman requested that we review allegations made by Defense Apparel Services (DAS) regarding the Navy's actions on three contracts awarded to DAS to manufacture polyvinyl chloride (PVC) radioactive material containment (RMC) bags. DAS alleged that the Navy caused delays and attempted to terminate the DAS contracts to cover-up procurement mistakes. Further, DAS alleged that the Navy contracted for more PVC bags than necessary and that the material specified to be used to manufacture PVC bags had inherent defects that allowed leakage of radioactive material.

Radioactive Material Containment Bags. The Navy's nuclear ships and shipyards dispose of low-level radioactive contaminated materials using RMC bags. The bags are yellow, made in various sizes, and manufactured using various materials such as Polyethylene, PVC, and Polyurethane. The RMC bags are used for incinerating and/or burying low-level contaminated materials. The RMC bags made with PVC are not suitable for incineration because of the objectionable chemicals that are released when they are burned.

DAS Contracts. During 1996, the Naval Inventory Control Point (NAVICP), Mechanicsburg, Pennsylvania, awarded DAS three fixed-price contracts to manufacture PVC bags. The contracts are discussed in detail in the following paragraphs.

Contract Number N00104-96-C-7755. NAVICP awarded the contract to DAS on May 22, 1996 for approximately \$1.9 million. The contract required manufacturing 2.47 million 24" x 24" PVC bags, with all bags scheduled for delivery by January 17, 1997. In October 1996, the Navy accepted the first article test clearing DAS for production of the bags. In February 1997, DAS submitted production lot samples from their first production lot of 44,200 bags and in March 1997, DAS submitted production lot samples from their second production lot of 512,500 bags. The Navy rejected both production lots because of faulty seams, incorrect bag dimensions, cracks, and uneven and torn edges. In contract Modification P00006 dated June 22, 1998, the Navy and DAS agreed to new inspection criteria on the previously submitted production lots. Using the new criteria, DAS self-inspected the two lots and removed 53 percent of the bags in the first lot and 13 percent of the bags in the second lot that did not conform. In October 1998, the Navy reinspected the balance of the two lots and rejected them again because of thin seams and wrinkles. As of July 1999, DAS had not produced any bags and in a unilateral modification, the Navy established new delivery dates for the contract. The new delivery dates required DAS to deliver the first set of bags by October 27, 1999. On November 10, 1999, DAS still had not delivered any bags, therefore, the Navy issued DAS a "show cause" letter requiring DAS to provide reasons for nondelivery of the bags. DAS responded to this letter on November 29, 1999. Subsequently, the Navy determined that the DAS response was not acceptable and on February 9, 2000, the contract was terminated because of default.

Contract Number N00104-96-C-7767. NAVICP awarded the contract to DAS on September 19, 1996 for approximately \$162,000. The contract required manufacturing 799,000 8" x 10" PVC bags, with all bags scheduled for delivery by March 18, 1997. During March and April 1997, the Navy rejected two first article tests for various defects. On December 22, 1997, the Navy accepted the first article test clearing DAS for production of the bags. In July 1999, DAS had not produced any bags and in a unilateral modification, the Navy established new delivery dates for the contract. DAS was required to deliver the first set of bags by February 24, 2000. As of February 17, 2000, the contractor still had not delivered any bags under this contract.

Contract Number N00104-96-C-7769. NAVICP awarded the contract to DAS on September 19, 1996 for approximately \$402,000, with all bags scheduled for delivery by May 19, 1997. The contract required manufacturing 837,000 12" x 24" PVC bags. During March and April 1997, the Navy rejected two first article tests for various defects. In July 1999, DAS had not produced any bags and in a unilateral modification, the Navy established new delivery dates for the contract. DAS is required to deliver a first article test sample by August 2, 2000. As of February 17, 2000, the contractor had not delivered any other first article tests.

Objectives

The audit objective was to determine whether the Navy properly administered the contracts for RMC bags. Additionally, the audit determined whether the Navy ordered excessive inventory of PVC RMC bags and allowed the use of a defective material. See Appendix A for a discussion of the audit scope and methodology.

Summary of Allegations and Audit Results

A summary of the DAS allegations against the Navy and our audit results are presented below.

Allegation. The Navy did not properly administer the DAS contracts. In order to hide procurement mistakes, the Navy caused unjustified and inordinate delays, repeatedly attempted to terminate the DAS contracts, and exhibited prejudicial treatment against DAS.

Audit Results. The allegation was not substantiated. There was no support that the Navy did not properly administer the three contracts with DAS for PVC RMC bags. The Navy did not attempt to intentionally cause delays or terminate the DAS contracts because of procurement mistakes. Additionally, we determined that DAS was treated no differently than another PVC bag manufacturer in terms of quality assurance and PVC bag inspection procedures.

Unjustified and Inordinate Delays. Over a 2-year period, NAVICP worked with DAS to address the DAS requests for clarification concerning the contract specification requiring the bags to be free from foreign matter. We believe that the Navy attempts to clarify the requirement concerning foreign matter did not delay DAS from continuing future production on any of the three contracts. DAS was never prevented from restarting production of PVC bags.

Background. In March 1997, the Navy disapproved the first article test samples for contract number N00104-96-C-7769 because of workmanship issues, including foreign matter embedded in three of the bags' film. The contract specification SS-481, Revision 2, "Polyvinyl Chloride Bags, Tubing, and Sheet; Clear and Yellow," June 27, 1995, paragraph 3.7, "Workmanship," states that bags are to be free from particles of foreign matter. The Navy believes that foreign matter embedded in the film causes pinholes.

PVC Film. DAS responded to the Navy that they believed that foreign matter was inherent to the process of making PVC film, and they had inspected PVC film from several suppliers and determined that all of the samples included foreign matter. The Navy disagreed with the DAS assertion that foreign matter existed in all supplier's film. The Navy had also received material from other manufacturers under specification SS-481, Revision 2 that met the requirements of the specification. While we agree with DAS that there may always be foreign matter in PVC film, another Navy bag manufacturer solved this problem by removing the defective film prior to manufacturing or discarding nonconforming bags from the first article test sample or production lot. Further, foreign matter in the PVC film was not the only reason that the Navy rejected first article test samples from DAS. DAS has submitted compliant PVC bags after the Navy identified the problems with foreign matter. In November 1997, DAS submitted first article test samples for contract number N00104-96-C-7767. In December 1997, the Navy approved and accepted these compliant PVC test samples.

Contract Termination. We did not identify any attempts by the Navy to unjustly terminate the DAS contracts. During discussions between the Office of the Assistant Secretary of the Navy, NAVICP, and DAS concerning foreign matter and workmanship issues associated with the rejections of first article test and production lots one and two samples, the Navy suggested numerous alternatives to resolve the issues, including terminating the DAS contracts. We believe the suggestions made by the Navy during meetings between the Navy and DAS were made to attempt to resolve the workmanship issues associated with production lots one and two and not to coerce DAS into terminating the contract.

Prejudicial Treatment. There is no evidence that the Navy prejudicially treated DAS. DAS was treated the same as another PVC bag manufacturer in terms of quality assurance and contract inspections. The quality assurance performed by the Defense Contract Management Command-Hartford, on the DAS contracts, and by the Defense Contract Management Command-Philadelphia, on the other PVC bag contracts, was similar. In addition, the procedures used by the Navy Fleet Radiological Support Division, to determine if the first article test and production lot PVC bag samples met specification requirements, were the same for both PVC bag manufacturers.

Allegation. The Navy ordered excessive amounts of PVC bags because the Navy is discontinuing the use of PVC bags and is going to use Polyurethane bags in the future.

Audit Results. The allegation was not substantiated. We determined that the Navy had not over-ordered PVC bags. NAVICP consolidated PVC bag purchases in 1996 to supply all Navy shipyards and the Nuclear Navy fleet with PVC bags. The total NAVICP demand for PVC bags in 1996 justified the quantities of bags NAVICP ordered on the 1996 DAS contracts. The quantities of PVC bags ordered would have provided the Navy with enough inventory to meet projected demands. The Naval Sea Systems Command has not made any commitment to solely use polyurethane bags, which cost approximately four times more than the PVC bags. Since March 1998, NAVICP has attempted to purchase polyurethane bags from two different contractors but neither contractor has been able to produce the bags to the Navy's specification.

Allegation. The Navy allowed the continued use of product known to have inherent quality problems. The Navy has been aware since 1997 that the PVC material they have specified, accepted, and used, for the past 18 to 20 years, has an inherent defect that can cause leakage of radioactive material.

Audit Results. The allegation was not substantiated. We determined that, based on the Navy's inspection criteria and practices, the Navy has not specified, accepted, or used material in PVC bags that has inherent defects. Another PVC bag manufacturer was able to deliver bags that met the same Navy specification as DAS must meet. The bag manufacturer identified that they solved the foreign matter problem by removing the defective film prior to manufacturing the bags or discarding nonconforming bags from the sample or

production lot. The naval shipyards have not had a problem with foreign material in the bags they purchased or the ones they obtained from the Navy supply system. Additionally, the naval crews inspect PVC bags for pinholes prior to using them and if they are found defective, the bags are discarded.

Appendix A. Audit Process

Scope

Work Performed. The audit focused on NAVICP, Mechanicsburg, Pennsylvania, 1996 procurement of PVC bags from DAS valued at about \$2.5 million. We interviewed personnel and reviewed all NAVICP contracts for PVC bags, to determine whether NAVICP properly administered contracts N00104-96-C-7755, N00104-96-C-7767, and N00104-96-C-7769 held with DAS. We reviewed contract actions and correspondence dated from January 1993 through February 2000.

Limitations to Scope. We did not review the management control program because the audit scope was limited to the allegations made by DAS.

DoD Functional Area Reform Goals. Most major DoD functional areas have also established performance improvement reform objectives and goals. This report pertains to achievement of the following functional area objective and goal:

Environmental Functional Area. Objective: Reduce, in a cost-effective manner, risks to human health and the environment attributable to contamination resulting from past DoD activities. **Goal:** Ensure immediate action to remove imminent threats to human health and the environment. (ENV-1.2)

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in the DoD. This report provides coverage of the Defense Contract Management high-risk area.

Methodology

Use of Computer-Processed Data. We used computer-processed Item Manager Tool Kit procurement data provided by NAVICP. The data from the Item Manager Tool Kit tracks the inventory status of procurement items such as PVC bags. To the extent that we reviewed the computer-processed data, we concluded that the data are sufficiently reliable to be used in meeting the objectives. We did not audit the system that produced the data.

Use of Technical Assistance. We obtained technical assistance from a Mechanical Engineer from the Technical Assessment Division of the OAIG-AUD. The Mechanical Engineer assisted us in reviewing the contractor's allegations pertaining to the contracts for PVC bags. The assistance included reviewing the validity of contract specifications and reviewing the inspection criteria and results.

Audit Type, Dates, and Standards. We performed this program audit from July 1999 through February 2000 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD and three private companies. Further details are available upon request.

Prior Coverage

No prior coverage has been conducted on the subject during the last 5 years.

Appendix B. Report Distribution

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House Subcommittee on Government Management, Information, and Technology,
Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International
Relations, Committee on Government Reform

Honorable Joseph I. Lieberman, U.S. Senate

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