

---

September 11, 2003

---



# Cooperative Threat Reduction

Solid Rocket Motor  
Disposition Facility Project  
(D-2003-131)

---

Department of Defense  
Office of the Inspector General

---

*Quality*

*Integrity*

*Accountability*

### **Additional Copies**

To obtain additional copies of this report, visit the Web site of the Inspector General of the Department of Defense at [www.dodig.osd.mil/audit/reports](http://www.dodig.osd.mil/audit/reports) or contact the Secondary Reports Distribution Unit of the Audit Followup and Technical Support Directorate at (703) 604-8937 (DSN 664-8937) or fax (703) 604-8932.

### **Suggestions for Future Audits**

To suggest ideas for or to request future audits, contact the Audit Followup and Technical Support Directorate at (703) 604-8940 (DSN 664-8940) or fax (703) 604-8932. Ideas and requests can also be mailed to:

ODIG-AUD (ATTN: AFTS Audit Suggestions)  
Inspector General of the Department of Defense  
400 Army Navy Drive (Room 801)  
Arlington, VA 22202-4704

### **Defense Hotline**

To report fraud, waste, or abuse, contact the Defense Hotline by calling (800) 424-9098; by sending an electronic message to [Hotline@dodig.osd.mil](mailto:Hotline@dodig.osd.mil); or by writing to the Defense Hotline, The Pentagon, Washington, DC 20301-1900. The identity of each writer and caller is fully protected.

### **Acronyms**

CTR	Cooperative Threat Reduction
DFARS	Defense Federal Acquisition Regulation Supplement
DSWA	Defense Special Weapons Agency
DTRA	Defense Threat Reduction Agency
FAR	Federal Acquisition Regulation
IG DoD	Inspector General of the Department of Defense
RASA	Russian Aviation and Space Agency
SOAE	Strategic Offensive Arms Elimination
SRMDF	Solid Rocket Motor Disposition Facility



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202-2884

September 11, 2003

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION,  
TECHNOLOGY, AND LOGISTICS  
UNDER SECRETARY OF DEFENSE FOR POLICY  
DIRECTOR, DEFENSE THREAT REDUCTION AGENCY

SUBJECT: Report on Cooperative Threat Reduction Program: Solid Rocket Motor  
Disposition Facility Project (Report No. D-2003-131)


We are providing this report, which the Deputy Secretary of Defense requested, for your review and comment. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. As a result of comments from the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation), we deleted Recommendations 1.c. We request that the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) and the Director, Defense Threat Reduction Agency provide additional comments on Recommendations 1.a. and 2.b., respectively, by November 10, 2003.

If possible, please send management comments in electronic format (Adobe Acrobat file only) to [Audrls@dodig.osd.mil](mailto:Audrls@dodig.osd.mil). Copies of management comments must contain the actual signature of the authorizing official. We cannot accept the / Signed / symbol in place of the actual signature. If you arrange to send classified comments electronically, they must be sent over the SECRET Internet Protocol Router Network.

We appreciate the courtesies extended to the staff. Questions should be directed to Ms. Evelyn R. Klemstine at (703) 604-9172 (DSN 664-9172) or Mr. Donney J. Bibb at (703) 604-9613 (DSN 664-9613). The project team members are listed on the back inside cover. See Appendix D for the report distribution.

By direction of the Deputy Inspector General for Auditing:

  
Shelton R. Young  
Director, Readiness and  
Logistics Support Directorate

# Office of the Inspector General of the Department of Defense

Report No. D-2003-131  
(Project No. D2002LG-0219)

September 11, 2003

## Cooperative Threat Reduction Program: Solid Rocket Motor Disposition Facility Project

### Executive Summary

**Who Should Read This Report and Why?** Civil service and uniformed officers who manage contracts and international programs should read this report. This report discusses topics of significant congressional, national, and international interest.

**Background.** This report, which is one in a series requested by the Deputy Secretary of Defense, evaluates DoD management of the Cooperative Threat Reduction (CTR) solid rocket motor disposition facility project. Other reports in the series will cover additional CTR projects and DoD organizational arrangements for the CTR Program. Specific objectives of the CTR program are to destroy chemical, nuclear, and other weapons; transport, store, disable, and safeguard weapons until their destruction; and establish verifiable safeguards against proliferation of weapons of mass destruction.

DoD contracted with Lockheed Martin Advanced Environmental Systems for \$52.4 million to design, develop, fabricate, and test a closed burn, solid rocket motor disposition facility for the Russian Federation in April 1997. That facility was to allow Russia to eliminate 319 intercontinental ballistic missile canisters, 916 motor cases, and 17,494 metric tons\* of solid rocket propellant by December 2002. Initially, the facility was to be located in Perm, Russia, but was changed to Votkinsk (in the Udmurt Republic), Russia, in February 1998, after environmental concerns in Perm. The solid rocket motor disposition facility project required the burning of propellant from disassembled motors and disposal of the by-products created by burning. The project also included the elimination of motor cases, missile transport canisters, and launch canisters in a manner consistent with requirements of the Strategic Arms Reduction Treaty. As of April 2003, DoD had disbursed \$99.7 million to assist Russia in the disposal of solid rocket propellant and motor cases.

**Results.** Although the DoD spent \$99.7 million to design and begin construction of a facility that would eliminate solid rocket motors, Russian officials informed DoD in January 2003 that Russia would not be able to provide the land allocation to support the facility. Because of local opposition in the Udmurt Republic, that facility will not be constructed. As a result, the United States may spend \$44.9 million to build temporary storage facilities for missiles and upgrade Russian capabilities for burning solid rocket motors. According to Defense Threat Reduction Agency officials, between January 2003 and August 2003, the agency disbursed about \$72,000 for maintenance and security of buildings and other infrastructure that DoD had provided at the project site to ensure that the DoD investment would be available to support other CTR projects in Russia.

---

\* A metric ton equals 2,204.6 pounds.

Negotiating an agreement with Russia on the disposal of solid rocket motors should ensure that DoD and Russia understand their respective responsibilities and commitments. Determining the future of the facilities and equipment that DoD purchased for the solid rocket motor disposition project will eliminate the need for securing those items. In addition, the Defense Threat Reduction Agency could improve its management of CTR projects by including a risk mitigation strategy in written acquisition plans, implementing a milestone decision review and program baseline process, and ensuring that project managers maintain documentation of actions they have taken. (See the Finding section of the report for the detailed recommendations.)

On the positive side, the Defense Threat Reduction Agency has taken several steps to reduce DoD risks in the execution of ongoing and future projects. One initiative undertaken in conjunction with the Office of the Under Secretary of Defense for Policy is the development of Joint Requirements Implementation Plans. The Defense Threat Reduction Agency has also issued instructions to ensure that acquisition plans are retained and contracting officer's representative files are maintained. In addition, the Defense Threat Reduction Agency has implemented a phased approach to project execution to further reduce DoD risks. For solid rocket motors, the Defense Threat Reduction Agency has shifted the risk to Russia by agreeing to reimburse Russia after the propellant is burned.

**Management Comments and Audit Response.** Comments from the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) and the Director, Defense Threat Reduction Agency were partially responsive. Although not required to comment, the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) agreed with our recommendations to the Defense Threat Reduction Agency, noting that policies have already been implemented and will continue to be followed and expanded upon. Based on comments from the Deputy Under Secretary of Defense, we deleted the draft recommendation to provide written plans to the Defense Threat Reduction Agency that include requirements, priorities, budgets, and schedules for the CTR Program. We will address that recommendation, as needed, in our review of CTR organizational arrangements.

Although management has taken positive actions, the comments are only partially responsive. The Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) and the Russian Aviation and Space Agency have completed negotiations to amend the Strategic Offensive Arms Elimination-Russia implementing agreement to establish the responsibilities and commitments of each party for the disposal of solid rocket motors. We request that the Deputy Under Secretary of Defense forward a copy of that amendment after it has been signed. The Director, Defense Threat Reduction Agency needs to provide the written guidelines that describe the process to be used, including guidelines for designating an appropriate milestone decision authority commensurate with the value, complexity, and level of congressional interest for each CTR project. We request that the Deputy Under Secretary and Director, Defense Threat Reduction Agency provide these copies by November 10, 2003. See the Finding section of the report for a discussion of management comments and the Management Comments section of the report for the complete comments.

# Table of Contents

---

<b>Executive Summary</b>	i
<b>Background</b>	1
<b>Objectives</b>	3
<b>Finding</b>	
Facility to Dispose of Solid Rocket Motors	4
<b>Appendixes</b>	
A. Scope and Methodology	20
B. Prior Coverage	21
C. Infrastructure at the Project Site, Votkinsk, Russia	23
D. Report Distribution	26
<b>Management Comments</b>	
Under Secretary of Defense for Policy Comments	29
Defense Threat Reduction Agency Comments	32
Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs)	34

---

## Background

On March 18, 2002, the Deputy Secretary of Defense requested that the Office of Inspector General of the Department of Defense (IG DoD) review the Cooperative Threat Reduction (CTR) projects that rely on Russian assurances and are vulnerable to misuse. This report discusses the solid rocket motor disposition facility (SRMDF) project. We will continue to evaluate other CTR projects that rely on Russian assurances and review the organizational arrangements between the CTR Policy office within the Office of the Under Secretary of Defense for Policy and the CTR Directorate at the Defense Threat Reduction Agency (DTRA).

To reduce the threat posed by the weapons of mass destruction that remain in the territory of the former Soviet Union, Congress enacted Public Law 102-228 (section 2551 [note], title 22, United States Code), “Soviet Nuclear Threat Reduction Act of 1991,” December 12, 1991. Public Law 102-228 designates DoD as the executive agent for the CTR Program. Public Law 102-228 and subsequent laws that continue the CTR Program are commonly referred to as Nunn-Lugar legislation. Objectives of Public Law 102-228 are to destroy chemical, nuclear, and other weapons; transport, store, disable, and safeguard weapons until their destruction; and establish verifiable safeguards against proliferation of weapons of mass destruction. From FY 1992 through FY 2003, Congress appropriated \$5.1 billion for the CTR Program. With those funds, DoD provided assistance to Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

**Framework for Assistance.** DoD provides assistance to countries of the former Soviet Union through umbrella agreements and implementing agreements. The umbrella agreement with Russia, signed on June 17, 1992, establishes the overall framework under which the United States provides assistance to Russia. The umbrella agreement, which was to expire in June 1999, was extended by a protocol in June 1999 for an additional 7 years. The implementing agreements, signed between DoD and designated executive agents of countries of the former Soviet Union, outline the type and amount of assistance the United States will provide. Generally, implementing agreements have been amended each year to increase the funding. The SRMDF project is managed under an implementing agreement commonly referred to as the Strategic Offensive Arms Elimination-Russia (SOAE-Russia) implementing agreement.

**Russian Executive Agents.** DoD entered into an implementing agreement with Russia’s Committee for Defense Industries on August 26, 1993. On February 11, 1998, the implementing agreement was amended to transfer executive agent responsibility to the Ministry of Economics. Russia eliminated the Ministry of Economics in 2000 and moved executive agent responsibility to the Russian Aviation and Space Agency (RASA). On August 30, 2002, DoD renewed an implementing agreement with RASA to continue CTR Program assistance.

**DoD Program Management.** The Office of the Under Secretary of Defense for Policy develops, coordinates, and oversees implementation of policy for the CTR Program, including the negotiation of implementing agreements through the Deputy Under Secretary of Defense (Technology Security Policy and

---

Counterproliferation). The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics manages the execution and implementation of CTR projects after implementing agreements are negotiated through the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs).<sup>1</sup> The Defense Nuclear Agency, which became the Defense Special Weapons Agency (DSWA) in June 1995, managed CTR projects until October 1998. Since then, the CTR Directorate, DTRA, has managed the day-to-day implementation of the CTR Program. DTRA operates under the authority, direction, and control of the Under Secretary of Defense for Acquisition, Technology, and Logistics.

**Disposal of Solid Rocket Motors.** In September 1994, DoD and Russia began exchanging ideas and technical data to define the requirements for destroying solid rocket motors from SS-24 and SS-25 intercontinental ballistic missiles and SS-N-20 submarine-launched ballistic missiles. Russia needed assistance with the disposal of solid rocket motors in order to meet its anticipated obligations under the Strategic Arms Reduction Treaty. After construction of the SRMDF, a DTRA contractor would extract propellant from motors by burning them in the SRMDF; dispose of the by-products formed by the burning process; and destroy motor cases, missile transport canisters, and launch canisters in a manner consistent with treaty requirements.<sup>2</sup>

**Design and Construction of the SRMDF.** After receiving approval from the Office of the Under Secretary of Defense for Acquisition and Technology (now Acquisition, Technology, and Logistics), DSWA awarded a contract to Lockheed Martin Advanced Environmental Systems (Lockheed Martin) for a facility in Perm, Russia, to dispose of solid rocket motors. In February 1998, DoD and Russia agreed to move the facility to Votkinsk, Russia, in the Udmurt Republic. Eventually, DTRA would reduce the scope of that contract, allow the contract to expire, and award separate contracts for the design, site preparation, and construction of the SRMDF. According to DTRA records, DoD costs to design and construct the SRMDF totaled \$99.7 million through April 2003.

**Contract for the SRMDF.** In April 1997, DSWA awarded contract DSWA01-97-C-0068 to Lockheed Martin for \$52.4 million to design, develop, fabricate, and test a facility in Perm, capable of eliminating 319 intercontinental ballistic missile canisters, 916 motor cases, and 17,494 metric tons of solid rocket propellant. In addition, DSWA exercised two options for the installation of or upgrades to utility services and roads from existing points to interfaces inside the SRMDF project site. Initial scheduling of contract work was to ensure disposal of solid rocket motors by 2002.

According to DTRA officials, in November 2000 the acquisition strategy for the SRMDF project changed, reducing the scope of work on contract

---

<sup>1</sup> DoD did not staff the position of the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) between 1998 and 2001.

<sup>2</sup> For intercontinental ballistic missiles subject to the Strategic Arms Reduction Treaty, "Protocol on Procedures Governing Conversion or Elimination," July 31, 1991, requires that the rocket stages be destroyed by explosive demolition or burning, if the solid fuel has not been removed. Also, the motor cases must be crushed, flattened, cut into two pieces, or destroyed by explosion.



---

DSWA01-97-C-0068 to design-only. In January 2001, Lockheed Martin transferred its assets in Lockheed Martin Advanced Environmental Systems to EnergoTech, LLC (EnergoTech). After DTRA made a business decision to let the contract expire, it notified EnergoTech in November 2001 that additional funds would not be provided for the contract. DTRA then modified the contract for closeout in March 2002, requesting that EnergoTech submit the SRMDF design as is, as of November 5, 2001. According to its records, DTRA disbursed \$92 million on contract DSWA01-97-C-0068 through April 2003.

**Contract to Complete Design.** To complete the SRMDF design, DTRA contracted with Versar, Incorporated (Versar), through Air Force Materiel Command contract F41624-01-D8552 in November 2001. In March 2002, DTRA also tasked Versar to monitor land allocation activities for the SRMDF. According to DTRA officials, Versar completed the design for the SRMDF in December 2002. According to its records, DTRA disbursed \$4.9 million to Versar on contract F41624-01-D-8552 through April 2003.

**Contract for Facility Support Infrastructure.** After the Udmurt Republic issued a decree to start construction of items not connected with SRMDF technology, DTRA awarded contract DTRA01-01-C-0053 to EnergoTech in August 2001 to finish constructing infrastructure and preparing the SRMDF project site. Site preparation included installation of infrastructure elements and resources for communications, electrical power, heating, natural gas, perimeter lighting and security, and sanitary waste and water. In addition, EnergoTech was required to complete sections of the road and rail systems that had not been completed under contract DSWA01-97-C-0068. However, following the decision not to provide additional funds for contract DSWA01-97-C-0068, DTRA terminated contract DTRA01-01-C-0053 on November 6, 2001. A description of infrastructure items, costs, and photographs of the SRMDF project are in Appendix C. According to its records, DTRA disbursed \$1.7 million on contract DTRA01-01-C-0053 through April 2003.

**Contract for Construction.** After a competition among contractors with existing indefinite quantity contracts, DTRA selected Bechtel National, Inc. (Bechtel) to construct, and start-up the SRMDF. However, Bechtel could not begin construction until Russia provided land for the SRMDF. To begin construction immediately following the issuance of land, and to limit additional expenditures, DTRA developed a three-phased plan. The first phase, which included pre-construction planning, was awarded to Bechtel on contract DTRA01-01-D-0011 in August 2002. According to its records, DTRA disbursed \$1.1 million on that contract through April 2003.

## Objectives

Our overall objective was to review the CTR project to design and construct a disposal facility for solid rocket motors. Specifically, we evaluated management of the SRMDF project designed for Russia, and controls over that project. See Appendix A for a discussion of the scope and methodology and Appendix B for prior coverage.

---

## **Facility to Dispose of Solid Rocket Motors**

Although the United States disbursed \$99.7 million on the SRMDF project, the project site will not be used to destroy solid rocket motors. The CTR project to design and construct the SRMDF began in 1997 and in January 2003, Russian officials informed DoD that Russia would not provide the land allocation to support the facility. That condition occurred because the implementing agreement with Russia did not specifically address the SRMDF project or responsibilities for obtaining the land, and DoD did not have adequate controls in place to mitigate risk when contracting for and managing the project. Because Russia still needs to destroy solid rocket motors in accordance with the Strategic Arms Reduction Treaty, the United States may spend \$44.9 million to build temporary storage facilities for missiles and upgrade Russian capabilities for burning solid rocket motors. Also, according to DTRA officials, between January 2003 and August 2003, the agency disbursed about \$72,000 for maintenance and security of buildings and other infrastructure DoD had provided at the SRMDF project site while the Office of the Under Secretary of Defense for Policy evaluated options for the future of the SRMDF design documents and infrastructure items.

### **Acquisition Requirements**

The Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) contain contracting requirements for DoD Components.

FAR Subpart 7.1, "Acquisition Plans," requires that Federal agencies perform acquisition planning for all acquisitions, including construction. It requires the acquisition plans to identify milestones at which decisions should be made in order to attain acquisition objectives. These objectives are to be described in the plan's statement of need. Any known cost, schedule, capability, or performance constraints are to be included in the acquisition plan. Technical, cost, and schedule risks are to be described in the plans to mitigate risks along with the consequences of the agency's failure to accomplish the mitigation efforts. The acquisition plans are also to include proposed resolution of environmental issues and any environmentally related requirements to be included in solicitations and contracts.

The DFARS contains requirements for acquisition plans and contracting officer's representatives. DFARS Subpart 207.1, "Acquisition Plans," requires written acquisition plans for production or services, including construction, estimated to cost a total of \$30 million or more for all years, or \$15 million or more for any fiscal year. DFARS Subpart 201.6 "Contracting Authority and Responsibilities," requires that contracting officer's representatives maintain a file for each contract that contains documentation of actions taken according to the authority delegated by the contracting officer.

---

## State of the Solid Rocket Motor Disposition Facility Project

Although DoD disbursed \$99.7 million on the CTR project from May 1997 through April 2003 for the design and pre-construction activities of the SRMDF, Russian officials informed DoD in January 2003 that Russia could not provide the land allocation to support the facility in Votkinsk because of regional political issues and environmental concerns. DoD Components had been aware of environmental concerns impacting the land allocation for the SRMDF since at least January 1997, when DoD started evaluating contract proposals. Those concerns continued until Russia officially stopped the project in January 2003.

**Contract Proposal Evaluation.** DoD Components had been aware of potential issues associated with the SRMDF since at least January 1997, when DSWA started evaluating proposals for destroying solid rocket motors in Russia. Initially, the technical evaluation panel rated most elements of the Lockheed Martin proposal for a closed burn facility as a “high” risk, meaning that there would likely be serious disruption of schedule, increase in cost, or degradation of performance.<sup>3</sup> The technical evaluation panel concluded that the closed burn process was immature, because it had not been used in production rate demilitarization of solid rocket motors or tested on a “strategic-size high ammonium percholate motor.”<sup>4</sup> Based on Lockheed Martin’s “best and final offer” for the SRMDF, the technical evaluation panel lowered the risk to “moderate,” meaning that potential disruption of schedule, increase in cost, or performance degradation would probably be overcome with special contractor emphasis and close monitoring by the Government. However, the panel identified environmental permitting problems as a risk. The panel stated that the environmental permit process in Russia could be much longer and more costly than projected by Lockheed Martin. In addition, the panel stated:

[A] major programmatic risk is whether the burn facility can be (environmentally) permitted within SOW-compliant [Statement of Work] timeframes. Based on U.S. regulations, this production facility would have to be permitted as a CFR [Code of Federal Regulations] 40 Subpart X and thus [be] subject to an extensive series of trial burns and rounds of public comments. In the U.S., the permitting process, if successful, can take many years, and the track record of companies/USG [U.S. Government] agencies applying for these permits has been rather dismal. . . . The real issue is whether an environmental permit will be as hard to obtain in Perm. Throughout the proposal, LM [Lockheed Martin] attempts to minimize any anticipated difficulties by stressing how clean their facility emissions really are and describing the public outreach program they intend to use. LM has received a lukewarm acknowledgement from the local environmental council that confined burn can be considered as an “alternative option” – hardly a ringing endorsement of their approach. Unfortunately, this is a political rather than a technical issue and thus may be extremely difficult to

---

<sup>3</sup> The technical evaluation panel did not provide an overall rating to the initial contractor proposals.

<sup>4</sup> Ammonium percholate is an oxidizer used in solid rocket motors.

---

overcome and remain in compliance with the SOW schedule for motor elimination.

**Warning From Russian Official.** Before DSWA awarded the contract to dispose of solid rocket motors, the Chief, Main Directorate of International Military Cooperation, Russian Ministry of Defense (the Chief) expressed concern over awarding of a contract that used a closed burn system to dispose of solid rocket motors. In a letter dated April 14, 1997, to the director, On-Site Inspection Agency,<sup>5</sup> the Chief stated that ecological and safety issues had caused serious concern among the public in Perm and on-site authorities, who, the Chief said, would block construction of the incineration test bed because of the obvious and visually observable negative effects on the environment closed burn produces. In addition, he warned that the opinion of the local administration and populace would have a decisive influence on the fate of the closed burn facility, and Russian federal authorities would not likely be able to change that situation. The Chief also cited a project to construct a chemical weapons destruction facility that was stopped by the local populace and authorities.

**Post-Award Period.** DoD encountered problems obtaining environmental permits and the land allocation for the SRMDF project from December 1997 until Russia officially stopped the project in January 2003. Although Lockheed Martin was contracted to construct the SRMDF in Perm, the local government of Perm issued a referendum rejecting the facility in December 1997, following environmental concerns and a vote by the local population. Subsequently, the Russian Prime Minister signed a directive on December 29, 1997, moving the project from Perm to Votkinsk. The Deputy Assistant to the Secretary of Defense (CTR) accepted the Votkinsk site in February 1998.

**Move to Votkinsk.** According to DTRA officials, Votkinsk land would be allocated after Russian officials approved a feasibility study, which involved a technical, economic, and environmental impact analyses of the SRMDF project. The feasibility study was completed in May 1999 by a Russian design institute, with data provided by Lockheed Martin. After RASA received approvals from Russian regulatory agencies and environmental experts, RASA approved the feasibility study on July 31, 2001. According to DTRA officials, the local population in Votkinsk conducted public protests for environmental issues that resulted in the Udmurt Republic delaying a decision on land allocation until after the April 2002 city and district elections. With the decision on land allocation still pending, DoD officials questioned RASA officials on the timeframe for land allocation during the first Executive Review<sup>6</sup> meeting between Russia and DoD in July 2002. RASA officials responded that the land would be allocated by the end of September 2002. According to DTRA officials, in September 2002, RASA was informed that the contractor was not authorized to mobilize or begin construction until Russia provided the land allocation documents.

---

<sup>5</sup> The Director, On-Site Inspection Agency, forwarded the letter to the Office of the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs).

<sup>6</sup> DoD and Russian executive agents started meeting semi-annually in July 2002 to review CTR projects that rely on verbal, good faith obligations from Russia. During the meetings, Russian executive agents identify how they have used CTR assistance, why assistance is still needed, and what Russia is contributing to accomplish project goals.

---

**RASA Letter on Land Allocation.** DTRA officials stated that the initial indication that Russia would not be able to obtain the land allocation was in a letter from RASA dated October 17, 2002. In the letter, RASA suggested terminating the SRMDF project, stating that the Udmurt Republic presented unacceptable land allocation terms. In addition, RASA anticipated difficulty in obtaining a construction permit. On October 18, 2002, the SOAE-Russia program manager at DTRA telephoned the RASA department manager for the SRMDF to discuss the proposed termination of the SRMDF project. According to the SOAE-Russia program manager, the RASA department manager suggested moving the SRMDF project to another location. The SOAE-Russia program manager refused because relocating the project would increase costs and delay completion.

**Executive Review in January 2003.** At the January 2003 Executive Review that was attended by representatives from the IG DoD, the Director of the Missile Technologies Division, RASA, informed DoD officials that Russia officially recommended the SRMDF project be terminated. The Director stated that RASA had received a letter from the Udmurt Republic rejecting the land allocation proposal, primarily because of environmental opposition. The Director asked that DoD not compare the SRMDF situation to that of another CTR project that Russia did not use.<sup>7</sup> He requested that DoD turn the SRMDF design over to Russia for potential future use.

**Russia's Official Response.** The Director General of RASA provided the official Russian response to the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) in a letter dated January 31, 2003. The Director General stated that although Russia was not ruling out construction of the SRMDF in a different region, construction had been stopped because the local Udmurt government did not support the SRMDF. In addition, he stated that Russian regulations would not allow Russia to adopt a decision regarding land allocation without concurrence from the local government. He also cited risks associated with constructing the facility, stating that Russia had concerns over the operating capabilities and productivity of the SRMDF that could not be confirmed before its completion. The Director General also pointed to the length of time that U.S. contractors took to design the SRMDF, and stated that construction and commissioning timelines were unacceptable. According to the Director General, those timelines would not allow for the destruction of solid rocket motors to begin earlier than 2007, at best. The Director General suggested that RASA modify two open-air burn stands in Perm and Kemerovo, Russia, and complete construction on a closed, environmentally safe stand, which has been under construction in Perm for more than 10 years.

---

<sup>7</sup> As reported in IG DoD Report No. D-2002-154, "Cooperative Threat Reduction Program Liquid Propellant Disposition Project," September 30, 2002, Russian officials stated that Russia used liquid propellant, which was intended for use at a facility that was constructed using CTR Program funds, for the Russian space program instead.

---

## Managing Risks to the Solid Rocket Motor Disposition Project

DoD disbursed \$99.7 million on the SRMDF but was unable to complete the project because the SOAE-Russia implementing agreement does not specifically address the SRMDF project or responsibility for obtaining the land, and DoD did not have adequate controls to mitigate risk when contracting for and managing the project. Contracting areas that needed improvement include acquisition planning, contracting methods, and contractor requirements. Project management areas that needed improvement include plans that guide project reviews and decisions and documentation of project management efforts. Since the summer of 2000, DTRA has taken several actions to improve management of CTR projects.

**Implementing Agreement.** Although the SRMDF project was managed under the SOAE-Russia implementing agreement, that implementing agreement does not specifically identify a project to destroy solid rocket motors or require Russia to provide the resources necessary for destroying its solid rocket motors. Officials from the Office of the Under Secretary of Defense for Policy stated that the SOAE-Russia implementing agreement sufficiently justifies the SRMDF project because the agreement specifies that DoD will provide assistance to facilitate the expeditious, safe, and environmentally sound elimination of strategic offensive arms, including intercontinental ballistic missiles. However, that implementing agreement does not specifically identify the SRMDF project and does not require Russia to obtain the permits or the land necessary to build and operate a facility to dispose of solid rocket motors or provide deadlines for obtaining those resources. Instead, the implementing agreement limits Russian responsibility to providing performance specifications and requirements for materials, services, and training to DoD. In addition, because the implementing agreement did not define the SRMDF and, according to DTRA officials, the Office of the Under Secretary of Defense for Policy provided no other written guidance on the SRMDF, there is no assurance that DSWA was provided adequate direction on the requirements for and limitations of the SRMDF.

**Management Action Taken.** At the SOAE-Russia Program Management Review held in Moscow, Russia, in January 2003, RASA officials agreed to destroy the solid rocket motors. The Director of the CTR Program, DTRA, proposed that DoD negotiate a fixed fee for destroying each solid motor based on the operational costs of burning the motors. According to the Director, CTR Policy, a proposed amendment to the SOAE-Russia implementing agreement was provided to RASA on March 13, 2003. That proposed amendment establishes the responsibilities and commitments of DoD and RASA for the disposal of solid rocket motors and includes the number of rocket motors to be destroyed, the disposal timetable, and Russian and U.S. responsibilities. As of August 2003, DoD and RASA officials still needed to sign the proposed amendment to the SOAE-Russia implementing agreement and negotiate the amount DoD would pay for each missile that Russia destroyed.

In conjunction with the Office of the Under Secretary of Defense for Policy, DTRA has developed Joint Requirements Implementation Plans, updated regularly, that define project requirements, assumptions, and milestones that are mutually agreed upon with the executive agents for Russia. The plans also

---

provide a contracting approach, risk assessment and mitigation, and the assignment of responsibilities for projects between DoD and the executive agents for Russia.

**Mitigating Risks.** Neither DSWA nor DTRA adequately mitigated risks when planning and contracting for the SRMDF project. Specifically, there are no assurances that DSWA prepared an adequate acquisition plan. In addition, contracts for the SRMDF project did not adequately protect the Government's interests. Also, there are no assurances that DTRA took adequate actions to mitigate risks in managing the SRMDF project.

**Acquisition Plan.** Neither the project manager nor the contract specialist was able to locate an acquisition plan for the SRMDF project. Although they were unable to find the acquisition plan, an official in the CTR Program Directorate stated that an acquisition plan was most likely prepared for the procurement of the SRMDF, as the DSWA acquisition office strictly enforced acquisition plan requirements. However, without evidence of the acquisition plan, there are no assurances that DSWA adequately identified, described, or considered the risks associated with the acquisition of the SRMDF; developed adequate plans to mitigate those risks; or described the consequences of failure to accomplish those plans. In addition, there are no assurances that the acquisition plan contained the DFARS requirement for a milestone chart of acquisition objectives.

**Management Actions Taken.** In 2001 and 2002, DTRA took actions to help ensure that acquisition plans were maintained and that managers developed milestones for the acquisitions. In 1999, the Defense Contract Management Command reviewed DTRA acquisition procedures and recommended early involvement in the procurement process by contracting staff, and they also recommended that DTRA document its acquisition planning. According to DTRA officials, those recommendations led to new acquisition policy documents and processes, including acquisition plans. DTRA published Acquisition Management Policy/Procedure 01-03, "Contract File Index and Organization," June 14, 2001, which provides policy and procedures for filing contract-related documents. The index requires that contracting staff maintain acquisition plans and strategies in official contract files. Also, in October 2002, DTRA published Policy Memorandum 02-02, "DTRA Major Programs (Revised)," and DTRA Instruction 5000.03, "Implementing Instructions for Major Program Guidance," to implement defense acquisition system management guidance. The policy memorandum states that DTRA needs to more rigorously manage the cost, schedule, and performance of its acquisition programs.

DTRA Instruction 5000.03 provides a framework to manage programs and projects and requires managers to identify cost, schedule, and performance thresholds which, when not met, may endanger the program. The instruction provides guidance, format, and actions to be taken when a program manager submits a warning report to milestone decision authorities. The instruction also describes an acquisition strategy that allocates requirements by dividing them into blocks or phases of a program. DTRA program plans are to include key program risks; the potential impact of those risks on program cost, schedule, and performance; and actions for mitigating the risks. DTRA program plans are also

---

to include the approach used by the program manager for identifying, analyzing, mitigating, tracking, and controlling future program risks.

**Contracting.** The contracts for the SRMDF did not adequately protect the Government's interest in the project. The initial contract for the SRMDF, DSWA01-97-C-0068, was awarded for the complete design and construction of the SRMDF project, and thus, did not have built-in milestone decision points. In addition, that contract did not require contractors to monitor the progress of land allocation activities. Versar was the first DoD contractor required to monitor the progress of land allocation activities when contract F41624-01-D-8552 was amended in March 2002.

**Contract Method.** In 1997, contract DSWA01-97-C-0068 was awarded to Lockheed Martin to procure a specific quantity of services, namely the complete design and building of the SRMDF. DTRA paid Lockheed Martin \$17.5 million on that contract, through completion of the feasibility study in May 1999. Lockheed Martin and its successor, EnergoTech, continued working on the design and site preparation of the SRMDF for another 2 years at a cost of \$55 million, while Russian officials evaluated the study. In addition, after Russia approved the feasibility study, DTRA paid \$27.2 million to Bechtel, EnergoTech, and Versar to complete the design, perform site preparation, and pre-construction planning for the SRMDF through April 2003. If the contract had initially been prepared in phases, each phase would have needed approval before the next phase started.

**Management Action Taken.** In 2000, DTRA began to change its approach to contracting for major CTR services. The new approach uses indefinite-delivery, indefinite-quantity contracts awarded to five companies: Bechtel; Kellogg, Brown, and Root, Inc; Parsons Corporation; Raytheon Company; and Washington Group International, Inc. Also, in 2002, DTRA began using a three-phased approach to contracting in order to mitigate risks and allow an exit strategy if problems persist. For example, when DTRA re-solicited the SRMDF construction contract, the project manager structured the contract task orders so Bechtel was initially tasked to complete pre-construction planning. Afterwards, upon Russian allocation of the land, DTRA was to award another task order for construction. After construction, Bechtel was to be tasked with the remaining efforts necessary to complete and certify the SRMDF. According to DTRA officials, the phased approach will be used on other major CTR projects. At the January 2003 SOAE-Russia Program Management Review, the Director of the CTR Program informed Russian officials that DTRA would reduce the financial risks of executing new projects by using a three-phased approach.

**Contractor Requirements.** SRMDF contracts did not require contractors to monitor progress of land allocation activities until March 2002, almost 5 years after the initial SRMDF contract. However, according to DTRA officials, because of rising political difficulties in obtaining permits and the land allocation, DTRA authorized EnergoTech to contract with Global Green to develop a public outreach office in 2000. The intent of the public outreach was to obtain public support and approval of documents to move the SRMDF forward. Contract requirements to monitor land allocation for the project were not specified until a March 15, 2002, addendum to the scope of work in contract



---

F41624-01-D-8552 with Versar. That addendum required Versar to monitor land allocation activities for the SRMDF and to assist in preparing the support documentation needed to obtain the land allocation decree for the project. In addition, Versar was required to make periodic site visits and meet with officials from the Russian Federation, the Udmurt Republic, the city of Votkinsk, and the Votkinsk district to assess progress in obtaining the land allocation decree. Versar was also required to make recommendations on how to successfully obtain the land allocation and to provide weekly status reports to DTRA. According to the weekly status reports provided by the DTRA project manager for the SRMDF, Versar employees met regularly with RASA officials, the Russian Security Council, committees of the Russian Duma, and officials from the Russian President's office. As part of a mass media campaign, Versar also submitted articles promoting land allocation for the SRMDF project to the local and the central Russia newspapers. However, according to the progress reports, those efforts did not result in any progress on the land allocation.

**Project Management.** Although the technical evaluation panel warned DSWA in January 1997 that the SRMDF project required close monitoring, there are no assurances that DTRA took adequate actions to mitigate risks in managing the SRMDF project until DTRA assigned a new SOAE-Russia program manager and project manager for the SRMDF in September 2001. DTRA project plans for the SRMDF did not adequately address efforts to mitigate risks, and DTRA could provide little evidence of its efforts to manage the SRMDF project.

**Project Plans.** Although DTRA began preparing annual project plans for the SRMDF project in 1996, the project plans did not adequately address efforts to mitigate risks prior to September 2000. While DTRA project plans did not mention any risks until 2000, the April 2002 project plan for the SRMDF was the first plan that identified land allocation as a risk, 5 years after the contract was initially awarded.<sup>8</sup> To mitigate that risk, the plan states that the construction portion of contract DTRA01-01-D-0011 would not be awarded until receipt of the land allocation and construction permits.

**Project Manager Documentation.** The project manager for the SRMDF project, who is the contracting officer's representative, did not have complete documentation showing the history of previous actions taken to mitigate land allocation risks. Specifically, DTRA officials did not provide any evidence that Russia was ever asked to provide land for the SRMDF. The SRMDF project manager and the program manager for SOAE-Russia stated that the previous project manager maintained project management files on a lap top computer, but that those files had been erased. In addition, the project manager stated that the previous project manager did not transfer project files of contractual or project management documentation covering the history of the project. As such, they were unfamiliar with the actions and efforts of the previous manager to manage the SRMDF contracts and mitigate the risks associated with land allocation before September 2001, when the current project manager was hired.

Since September 2001, the SRMDF project manager did not fully document his efforts to mitigate the land allocation risk with Russian officials or

---

<sup>8</sup> DTRA officials did not provide SRMDF project plans for 1998 or 2001.

---

the progress that had been made to obtain the land allocation for the project. Although the project manager stated that he had conducted regular meetings with the Russians regarding land issues, he only provided trip reports for two meetings. The first meeting occurred in December 2001 and the second occurred in December 2002.

Neither trip report indicates that DTRA asked Russia to provide the land allocation by a specified date. Instead, the trip report for the December 2001 meeting states that the project manager held discussions on obtaining land with officials from the Udmurt Republic, but does not indicate any results. The trip report for the December 2002 meeting indicates that discussions centered only on the need for Russia to make a decision on land allocation as DTRA needed to make a decision soon on the future of the SRMDF. According to that trip report, the project manager informed Votkinsk officials that DTRA would place the project on hold unless there was a clear indication that the land allocation process was moving forward. Also, the project manager explained to Udmurt Republic officials that DTRA had reached a decision point for the SRMDF project that depended on the outcome and timing of the land allocation decision. RASA officials stated that Russia would take its own action to allocate land if the Udmurt Republic refused to do so, but they stated that Russian allocation could take a substantial period of time. Officials from the Votkinsk District believed it would be "political suicide" for officials in the city of Votkinsk to request the land allocation from Russia while leadership in the Udmurt Republic viewed the SRMDF unfavorably. The mayor of Votkinsk stated that he had not received strong support from RASA for the SRMDF, and he believed the public would protest if land allocation were forced. Udmurt Republic officials stated that over 80 percent of the population was against the SRMDF because of perceived safety issues and that the Udmurt officials would respond that the SRMDF should not be constructed within the Udmurt Republic.

DTRA procedures for maintaining contract and project files were unclear and the project managers may not have been fully informed of the requirements for maintaining their files. The memorandum from the contracting officer at DSWA, "Designation of Contracting Officer's Technical Representative (COTR)," undated, does not list requirements for maintaining files. It does refer to Defense Nuclear Agency Instruction 4105.2D, "Contract Administration Planning, Authority, and Responsibility," January 30, 1995, which defines the authority of the contracting officer's representative. However, because officials from the Acquisition and Logistics Directorate, DTRA, were unable to locate that instruction, there is no assurance that the instruction required contracting officers' representatives to maintain their files. Also, according to officials in the Acquisition and Logistics Directorate, the current project manager did not receive an appointment as the contracting officer's representative for contract DSWA01-97-C-0068, because that contract was near completion when he became the SRMDF project manager. As such, he was not formally briefed on his duties as a contracting officer's representative at that time. He did receive the standard memorandum, "Contract Officer's Representative Appointment," dated August 30, 2002, when he was appointed as the contracting officer's representative for contract DTRA01-01-D-0011, task order 0004. That memorandum informed him of the requirement to maintain a file on the contract in accordance with DTRA Acquisition Management Policy/Procedure # 01-05.

---

However, according to officials in the Acquisition and Logistics Directorate, DTRA Acquisition Management Policy/Procedure # 01-05 was never issued and the appropriate reference should have been Acquisition Management Policy/Procedure # 01-03<sup>9</sup> and Acquisition and Logistics Policy/Procedure # 02-04, "Contracting Officer Representatives," December 26, 2001. Acquisition and Logistics Policy/Procedure # 02-04 states that contracting officers' representatives are responsible for maintaining adequate records to sufficiently describe the performance of duties during the life of the contract and lists the types of documents the file should contain.

**Management Action Taken.** In April 2003, when officials in the Acquisition and Logistics Directorate became aware that its contracting officer's representation memorandums cited a non-existent requirement, they issued a notice requesting that DTRA Acquisition and Logistics staff revise memorandums issued to contracting officers' representatives. The revisions refer to Acquisition Management Policy/Procedure # 01-03 and Acquisition and Logistics Policy/Procedure # 02-04, which cite the requirements for maintaining files. The CTR Program Directorate still needs to establish procedures to ensure that project managers maintain their contracting officer's representative files and document all correspondence and significant conversations with representatives of former Soviet Union countries.

## **Fund Use, Storage, and Options for the Solid Rocket Motor Project**

Because Russia is not going to allocate land for the SRMDF project, the \$99.7 million disbursed for design and site preparation for the SRMDF will not be used to destroy solid rocket motors at Votkinsk. In addition, DoD has approved contracts to design temporary storage facilities in Perm for SS-24 and SS-25 missiles if DoD determines that it is in the best interest of the United States to construct those storage facilities. Should DoD decide to provide assistance with the construction of the storage facilities, the design documents will provide the data required by local authorities to issue construction permits. The estimated cost of building the storage facilities and providing limited support to Russia for disposal of solid rocket motors is \$44.9 million. Because the initial operating capability of the SRMDF was delayed, DoD agreed to assist Russia with its interim plans to burn motors at other facilities. Also, as of August 2003, the Office of the Under Secretary of Defense for Policy had not finalized options for the future of the SRMDF infrastructure items located in Votkinsk. Between January 2003 and August 2003, DTRA has disbursed \$72,000 for maintenance and security of the buildings and other infrastructure that DoD provided at the SRMDF project site to ensure the DoD investment in buildings and infrastructure is available to support other CTR projects in Russia.

---

<sup>9</sup> Although Acquisition Management Policy/Procedure # 01-03 provides instructions to contracting staff on maintaining contract files, officials in the Acquisition and Logistics Directorate stated that contracting officer's representatives should also maintain their files according to the indexing system in that instruction.

---

**Fund Use.** Because Russia is not going to allocate land for the SRMDF project in Votkinsk, the \$99.7 million disbursed for design and site preparation for the SRMDF will not be used to destroy solid rocket motors. Had DoD used an acquisition strategy that would have allowed for a phased approach and milestones in the contracting process, it could have stopped the design effort and withheld site preparation while Russia evaluated the feasibility study and attempted to obtain the land. The above actions would have saved the United States \$82.2 million and provided DoD with an opportunity to fund other CTR projects for dismantling weapons of mass destruction.

**Storage and Burn Stand Upgrades.** Because Russia delayed the decision on providing land for the SRMDF, Russia needed additional storage for solid rocket motors and other capacities for destroying those motors. In September 2002, DTRA contracted with Washington Group International for the phase 1 design upgrades to the open burn stand in Kemerovo, Russia. DTRA has designs for the infrastructure to support the burn stands in Perm, but will not construct the storage facilities until the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) makes a final decision on support for the burn stands. After the designs were completed and the licenses were obtained, Washington Group International was tasked to construct the facilities that were needed to ensure that missile disassembly did not stop. In November 2002, RASA requested that DTRA convert the open burn stands to semi-open burn stands because of environmental requirements. In January 2003, DTRA and RASA agreed that RASA should construct the semi-open burn stands. According to an undated information paper on solid rocket motor disposition prepared by the SOAE-Russia program manager, DTRA still needed to decide on the assistance that would be provided for infrastructure and equipment necessary to operate the semi-open burn stands. In addition, DTRA has proposed converting existing missile storage facilities at Perm to missile and missile motor storage as a contingency to allow continued missile disassembly. As of July 2003, DTRA estimated the cost to design, license, and construct storage facilities and burn stands in Perm was \$44.9 million.

**Management Actions Taken.** Officials from the Office of the Under Secretary of Defense for Policy stated that they are negotiating amendments to the SOAE-Russia implementing agreement for Russia to minimize its storage requirements by using semi-open burn stands at three locations. In addition, the officials stated that the amendments would require RASA to secure the required construction permits and land for the storage facilities before DoD concludes contracts for construction of the storage facilities. The officials also stated that the amendments would require Russia to pay maintenance and storage costs beginning in October 2004.

**Options for Design and Infrastructure.** As of August 2003, DTRA had not finalized options for the future of the SRMDF infrastructure items located in Votkinsk. DTRA has consolidated all design documentation for the SRMDF, distributed residual equipment to other CTR projects, and transferred the administration and housing complex at Votkinsk to the CTR project for disassembling and eliminating SS-25 missiles. DTRA still needs to decide the future of the warehouse and administrative buildings at the SRMDF project site

---

and is evaluating their use on three other CTR projects. Those facilities were being secured against pilferage through a separate CTR contract.

**Project Documentation.** The SRMDF project generated over 10,000 technical and management documents for the design, construction, and operation of the SRMDF. Versar was tasked to transform all documents to electronic media in both English and Russian languages and place those documents in an electronic database. According to the SRMDF project manager, the tasking was originally meant to facilitate management of the SRMDF, but after the SRMDF project was halted, the tasking continued because the technology can be used in the United States and, if Russia cannot open burn its solid rocket motors, the plans can be used to build a closed burn facility in Russia. As of August 2003, Versar had completed the electronic archive according to DTRA officials.

**Government-Furnished Equipment.** Items purchased by DTRA were being held in storage in the United States and Russia. Those items included computer hardware and software, equipment and furniture for project offices, and equipment and furniture for housing. DTRA planned to dispose of the equipment stored in the United States, consisting mainly of obsolete computer hardware and software, with the exception of laptop computers that could be used on other CTR projects. As of August 2003, DTRA had transferred the administration and housing complex and associated office equipment in Votkinsk to the CTR project for disassembling and eliminating SS-25 missiles. Also, DTRA had transferred other Government-furnished equipment in Votkinsk to Moscow where it is being stored for use on other CTR projects.

**SRMDF Facilities and Infrastructure.** The existing SRMDF facilities and infrastructure include an administrative building, a warehouse, two potable water wells and fully furnished well houses, a 4-kilometer gravel access road, a power line and substation, and a natural gas pipeline to the site. The options for the facilities and infrastructure include moving and transferring the facilities to other CTR projects or using the facilities as a satellite maintenance facility, turning over or selling the facility and infrastructure to the local entity in Votkinsk, or abandoning or destroying the facility and infrastructure in-place. As of August 2003, DTRA had not finalized the options.

## Conclusions

Although DTRA disbursed \$99.7 million for the CTR Program on design and site preparation of a facility to destroy solid rocket motors, DoD was informed that land and environmental permits would not be allocated for constructing the facility. DoD managers were aware of the environmental and political concerns surrounding closed burning of solid rocket motors before they contracted to design and construct a closed-burn disposition facility. Because of the alleged environmental concerns, residents of Perm, and then Votkinsk, rallied against the SRMDF in their communities. Also, the cost escalated while Russian agencies took 2 years to evaluate the feasibility study for the SRMDF. Although Russian agencies finally approved the feasibility study, environmental protests continued,

---

and RASA officials informed DoD that land and permits would not be provided for the SRMDF in Votkinsk. As of April 2003, DoD had disbursed \$99.7 million for a facility that will not be constructed—almost twice the initial contract amount of \$52.4 million that was awarded in April 1997 to design, build, and test the facility in Perm. That facility was to allow Russia to eliminate 319 intercontinental ballistic missile canisters, 916 motor cases, and 17,494 metric tons of solid rocket propellant by December 2002. Because the destruction of solid rocket motors is a Russian obligation under the Strategic Arms Reduction Treaty, DoD will continue to assist Russia in destroying solid rocket motors. That assistance may include additional funding of \$44.9 million for facilities to store missiles and burn solid rocket motors. In addition, DoD is negotiating a fixed fee to pay Russia for each solid rocket motor that Russia destroys.

DoD could have better managed the risks associated with the SRMDF project in order to protect or reduce the U.S. investment. First, the SOAE-Russia implementing agreement should have stated Russian responsibilities, including timeframes, for approving the feasibility study and obtaining land and permits. Second, DoD needed to prepare acquisition plans that included milestone decisions based on Russian progress in meeting its obligations and on contract costs and contractor progress. Third, since CTR project managers are not located in Russia full-time, contracts for the design and construction of the SRMDF should have included requirements for monitoring land allocation activities from the start of the project. Fourth, project managers should have been required to maintain documentation on their actions to manage contracts for which they were given responsibilities as contracting officers' representatives. This is especially important because several CTR project managers are military officers, subject to being transferred to other assignments.

The SRMDF project points out some of the uncertainties that can occur when working with foreign governments. For example, DoD needed political support in Russia at the national, republic, and local levels for the SRMDF project to be successful. For projects where support is needed at multiple political levels, the foreign government may be better able to deal with local politics. Thus, it may be preferable for Russia to be primarily responsible for destroying its own weapons of mass destruction and for DoD to perform support functions. DTRA uses a similar arrangement for the CTR project to destroy nuclear-powered ballistic missile submarines. Specifically, for that CTR project, Russian companies dismantle the submarines and DoD pays the Russian companies as dismantlement progresses. DoD and Russia are considering using a similar arrangement for the destruction of solid rocket motors. DoD should also consider using similar arrangements for other CTR projects as well. In addition to reducing DoD risks, those arrangements would place more responsibility on Russia for destroying its weapons.

## **Recommendations, Management Comments, and Audit Response**

**Deleted Recommendation.** As a result of comments from the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation), we

---

deleted Recommendation 1.c. We will address that recommendation, as needed, as part of our review of CTR organizational arrangements.

**1. We recommend that the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation):**

**a. Prepare and negotiate a written implementing agreement with the Russian Aviation and Space Agency that establishes the responsibilities and commitments of each party for the disposal of solid rocket motors. At a minimum, the implementing agreement should include:**

**(1) The number of rocket motors to be destroyed.**

**(2) A timetable for the disposal of solid rocket motors.**

**(3) Commitments from Russia to assure responsibilities for destroying solid rocket motors.**

**Management Comments.** The Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) concurred, stating that negotiations have been completed with Russia on amending the SOAE-Russia implementing agreement. The amended agreement will commit RASA to destroying all SS-24 rail-mobile missiles according to the Strategic Arms Elimination Treaty by December 31, 2008, and all SS-25 road-mobile missiles by December 31, 2016. The amendment will also commit Russia to modernizing burn stands at Kemerovo and Perm, dedicating those stands to burning propellant-filled motors from SS-24 and SS-25 missiles, and minimizing storage needs for rocket motors by burning SS-24 and SS-25 motors at Perm, Kemerovo, or Biysk. In addition, the amendment will commit Russia to taking actions necessary to secure permits and land allocations for modernizing and using the burn stands at Kemerovo and Perm, constructing any facilities required to store missiles, and beginning on January 1, 2005, maintaining and storing SS-24 and SS-25 missiles at facilities constructed or acquired with DoD assistance. The Deputy Under Secretary has verbal agreement with RASA on the amendment and hopes to have it signed in the near future.

**b. Expedite the determination of the future of the facilities and equipment purchased for the solid rocket motor disposition project.**

**Management Comments.** The Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation) concurred, stating that DTRA is implementing its SRMDF infrastructure closeout plan. The Deputy Under Secretary acknowledged that it is taking longer than expected to analyze options for the two buildings at the project site.

**Audit Response.** The comments from the Deputy Under Secretary were partially responsive. The Deputy Under Secretary did not provide a date when the amended implementing agreement would be signed. In response to the final report, we request that the Deputy Under Secretary provide a copy of the amended agreement, signed by the Russian Aviation and Space Agency.

---

**2. We recommend that the Director, Defense Threat Reduction Agency:**

**a. Prepare acquisition plans before issuing solicitations and contracts for Cooperative Threat Reduction projects, in accordance with Federal Acquisition Regulation Part 7, “Acquisition Plans,” to include:**

**(1) Identifying risks that may exist, such as former Soviet Union countries not being able to provide the necessary resources to complete the project.**

**(2) Specifying procedures to mitigate those risks.**

**(3) Developing a milestone chart of acquisition objectives.**

**Management Comments.** The Director, DTRA concurred and stated that since 2001, DTRA has been preparing acquisition plans before issuing solicitations and contracts for CTR projects and would continue the practice. Although not required to comment, the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) agreed with our recommendation.

**Audit Response.** The comments from the Director, DTRA are partially responsive. The comments did not describe how acquisition plans for CTR projects identify risks that may exist or how procedures to mitigate those risks are specified. In response to the final report, we request that the Director, DTRA explain the procedures being used to ensure that all acquisition plans for CTR projects identify the project risks and risk mitigation procedures and provide an example of such an acquisition plan for a current or planned CTR project.

**b. Design and implement a milestone decision review and program baseline process for Cooperative Threat Reduction projects, as described in Defense Threat Reduction Agency Instruction 5000.03, “Implementing Instructions for Major Program Guidance.” That process should include guidelines for designating an appropriate milestone decision authority commensurate with each Cooperative Threat Reduction project’s value, complexity, or level of congressional interest.**

**Management Comments.** The Director, DTRA concurred, noting that in 2000, DTRA began using contracts that provide decision points and later implemented phased contracting, which provided even more decision points during project execution. Also, the Director commented that DTRA recently established its process for major acquisition programs, including one CTR project—the Chemical Weapons Destruction Facility. Although not required to comment, the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) agreed with our recommendation. The Assistant to the Secretary of Defense also commented that the new Deputy Assistant to the Secretary of Defense for Chemical Demilitarization and Threat Reduction is discussing the mechanics of a new, broader CTR decision process.

**Audit Response.** The comments from the Director, DTRA are partially responsive. In response to the final report, we request that the Director, DTRA provide the written guidelines that describe the process to be used, including



---

guidelines for designating an appropriate milestone decision authority commensurate with the value, complexity, and level of congressional interest for each CTR project.

**c. Establish procedures to ensure that project managers in the Cooperative Threat Reduction Directorate:**

- (1) Maintain all necessary documents and correspondence.**
- (2) Document actions taken as the contracting officer's representative.**
- (3) Document significant conversations with representatives of former Soviet Union countries.**

**Management Comments.** The Director, DTRA concurred, stating that DTRA is developing a training program to ensure the full implementation of those procedures. Although not required to comment, the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) agreed with our recommendation.

---

## Appendix A. Scope and Methodology

We reviewed DoD methods and policies used to administer the CTR Program, which included program, project, and financial management information. The review included provisions of Nunn-Lugar legislation, international agreements, the FAR, DFARS, and DoD directives. The documentation reviewed was dated from July 1991 through August 2003.

We conducted interviews with officials from the Office of the Under Secretary of Defense for Policy and DTRA. We also visited Russia to observe sessions between DoD officials, Russian officials, and representatives from U.S. contractors.

We performed this audit from October 2002 through August 2003 in accordance with generally accepted government auditing standards. We did not review the management control program in this audit.

We evaluated DoD management of the CTR Program to design and construct the SRMDF for Russia. Specifically, we identified and analyzed requirements, policy, and guidance that DoD and DTRA officials established and implemented to provide assistance to Russia. The review included an examination of available project documentation and financial data, the Strategic Arms Reduction Treaty I, the Strategic Arms Reduction Treaty II, and an evaluation of the umbrella agreement and the SOAE-Russia implementing agreement between DoD and Russia. We also examined the project implementation process of the CTR Program and compared the acquisition management procedures against requirements listed in the FAR and DFARS.

**Use of Computer-Processed Data.** We did not evaluate the general and application controls of the Centralized Accounting and Financial Resource Management System, which accounts for DTRA funds, because that was outside the scope of our review. To support the amount that the United States disbursed for the SRMDF project, we relied on data from that system. Inadequate controls in the Centralized Accounting and Financial Resource Management System could affect the disbursements included in this report.

---

## Appendix B. Prior Coverage

During the last 5 years, the General Accounting Office (GAO) and the IG DoD has issued 15 reports discussing the Cooperative Threat Reduction Program including congressional testimonies. Unrestricted GAO reports can be accessed over the Internet at <http://www.gao.gov>. IG DoD reports can be accessed at <http://www.dodig.osd.mil/audit/reports>.

### GAO

GAO Report No. GAO-03-1008R, "FY 2004 Annual Report on the Cooperative Threat Reduction Program, July 18, 2003

GAO Report No. GAO-03-627R, "FY 2003 Annual Report on the Cooperative Threat Reduction Program," April 8, 2003

GAO Report No. GAO-03-526T, "Weapons of Mass Destruction: Observations on U.S. Threat Reduction and Nonproliferation Programs in Russia," March 5, 2003

GAO Report No. GAO-03-341R, "Cooperative Threat Reduction Program Annual Report," December 2, 2002

GAO Report No. GAO-01-694, "Cooperative Threat Reduction: DoD Has Adequate Oversight of Assistance, but Procedural Limitations Remain," June 19, 2001

GAO Report No. NSIAD-00-138, "Biological Weapons: Effort to Reduce Former Soviet Threat Offers Benefits, Poses New Risks," April 28, 2000

GAO Report No. NSIAD-00-40, "Cooperative Threat Reduction: DoD's 1997-98 Reports on Accounting for Assistance Were Late and Incomplete," March 15, 2000

GAO Report No. T-NSIAD/RCED-00-119, "Weapons of Mass Destruction: U.S. Efforts to Reduce Threats From the Former Soviet Union," March 6, 2000

GAO Report No. RCED/NSIAD-00-82, "Nuclear Nonproliferation: Limited Progress in Improving Nuclear Material Security in Russia and the Newly Independent States," March 6, 2000

GAO Report No. NSIAD-99-76, "Weapons of Mass Destruction: Effort to Reduce Russian Arsenals May Cost More, Achieve Less Than Planned," April 13, 1999

---

## **IG DoD**

IG DoD Report No. D-2003-059-T, "Statement of David K. Steensma, Deputy Assistant Inspector General for Auditing, Office of the Inspector General of the Department of Defense to the House Committee on Armed Services on U.S.-Russian Cooperative Threat Reduction and Non-Proliferation Programs," March 4, 2003

IG DoD Report No. D-2002-154, "Cooperative Threat Reduction Program Liquid Propellant Disposition Project," September 30, 2002

IG DoD Report No. D-2002-033, "Management Costs Associated With the Defense Enterprise Fund," December 31, 2001

IG DoD Report No. D-2001-074, "Cooperative Threat Reduction Program," March 9, 2001

IG DoD Report No. D-2000-176, "Defense Enterprise Fund," August 15, 2000

---

## Appendix C. Infrastructure at the Project Site, Votkinsk, Russia

According to the SRMDF project manager, the existing SRMDF facilities and infrastructure include an administrative building, a warehouse, two potable water wells and fully furnished well houses, a 4-kilometer gravel access road, a power line and substation, a natural gas pipeline to the site, and other equipment. As of March 2003, DTRA stated that it had disbursed \$14.6 million to construct those items. According to the project manager, DTRA could reuse the administrative buildings and other equipment, valued at about \$900,000, for other CTR projects. The following figures show facilities and infrastructure at the site.



**Figure C-1. Administrative building (Building 5) during construction**



**Figure C-2. Warehouse (Building 14) during construction**



**Figure C-3. One of the well houses during construction**

Road surface  
sta 23+00 Looking back  
towards sta 20+00  
08.04.00



**Figure C-4. Portion of the 4-kilometer gravel access road**

October 7, 2000  
Access Road Sta 31+00  
placement of sleeved section of main pipeline in trench



**Figure C-5. Placement of natural gas pipeline**

---

## **Appendix D. Report Distribution**

### **Office of the Secretary of Defense**

Deputy Secretary of Defense  
Under Secretary of Defense for Acquisition, Technology, and Logistics  
Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs)  
Deputy Assistant to the Secretary of Defense (Chemical Demilitarization and Threat Reduction)  
Under Secretary of Defense for Policy  
Assistant Secretary of Defense (International Security Policy)  
Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation)  
Under Secretary of Defense (Comptroller)/Chief Financial Officer  
Deputy Chief Financial Officer  
Deputy Comptroller (Program/Budget)  
General Counsel of the Department of Defense

### **Department of the Navy**

Naval Inspector General  
Auditor General, Department of the Navy

### **Department of the Air Force**

Assistant Secretary of the Air Force (Financial Management and Comptroller)

### **Unified Command**

Commander, U.S. European Command

### **Other Defense Organizations**

Director, Defense Threat Reduction Agency

### **Non-Defense Federal Organization**

Office of Management and Budget



---

## **Congressional Committees and Subcommittees, Chairman and Ranking Minority Member**

Senate Committee on Appropriations  
Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Foreign Relations  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Reform  
House Subcommittee on Government Efficiency and Financial Management, Committee on Government Reform  
House Subcommittee on National Security, Emerging Threats, and International Relations, Committee on Government Reform  
House Subcommittee on Technology, Information Policy, Intergovernmental Relations, and the Census, Committee on Government Reform  
House Committee on International Relations  
House Subcommittee on International Terrorism, Nonproliferation and Human Rights, Committee on International Relations



# Under Secretary of Defense for Policy Comments



POLICY

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
2000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-2000

AUG 1 2003

MEMORANDUM FOR DIRECTOR, READINESS AND LOGISTICS SUPPORT  
DIRECTORATE, INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Draft Report on Cooperative Threat Reduction (CTR) Program: Solid Rocket  
Motor Disposition Facility (SRMDF) Project (Project No. D2002LG-0219)

Thank you for the opportunity to review and comment on the draft report regarding the SRMDF project in Russia. My response to the draft recommendations addressed to my office are provided below. In addition, my staff will provide under separate cover suggested technical corrections to the report.

DoD Inspector General (IG) Recommendation 1a: [We recommend that the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation)] prepare and negotiate a written implementing agreement with the Russian Aviation and Space Agency (RASA) that establishes the responsibilities and commitments for each party for the disposal of solid rocket motors. At a minimum, the implementing agreement should include:

- (1) The number of rocket motors to be destroyed.
- (2) A timetable for the disposal of solid rocket motors.
- (3) Commitments from Russia to assure responsibilities for destroying solid rocket motors.

OSD Policy Response: Concur. Russia has advised us through official correspondence of its plans to draw down its mobile missile force. In addition, we have completed negotiations on an amendment to the existing Strategic Offensive Arms Elimination Implementing Agreement that will address a number of the concerns raised in the draft Inspector General report. The amendment will commit RASA to:

- Destroy all SS-24 rail-mobile missiles and launchers in accordance with the START conversion and elimination protocol by December 31, 2008, and all SS-25 road-mobile ICBMs and launchers by December 31, 2016;
- Modernize at Russian expense the existing burn stands at Kemerovo and Perm and to dedicate the use of those modernized burn stands to burn propellant-filled motors from SS-24 and SS-25 ICBMs as appropriate;
- Minimize the need for motor storage by ensuring the removal of solid propellant from as many SS-24 and SS-25 motors as possible by burning them at the burn



stands at Perm, Kemerovo or Biysk (a stand currently in use to remove propellant from SS-N-20 motors);

- Take all necessary actions to secure required permits and land allocations should construction of storage facilities for SS-24 or SS-25 missiles or their motors be necessary;
- Take all necessary actions, including obtaining permits, to modernize the existing burn stands at Kemerovo and Perm and to burn propellant-filled motors from SS-24s and SS-25s;
- Pay all costs associated with the maintenance and storage of SS-24s and SS-25s or their propellant-filled motors at facilities constructed or acquired with DoD assistance, beginning January 1, 2005.

We have verbal agreement with the Russian executive agent on this amendment and hope to have it signed in the next several weeks.

DoD Inspector General (IG) Recommendation 1b: [We recommend that the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation)] expedite the determination of the future of the facilities and equipment purchased for the SRMDF project.

OSD Policy Response: Concur. I am informed by DTRA that it is currently implementing its SRMDF infrastructure closeout plan, although it is taking longer than expected to analyze options for the two buildings that had been constructed at the site. We are following up with DTRA to determine how best to capitalize on DoD's investment in SRMDF facilities and equipment to support other CTR projects in Russia.

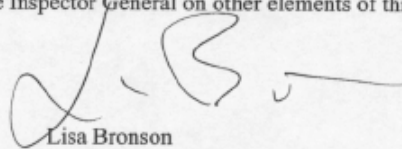
I recently approved Policy guidance to ensure that DTRA has whatever authority it feels necessary to implement its SRMDF closeout plan. A copy of that guidance is attached.

DoD Inspector General (IG) Recommendation 1c: We recommend that the Deputy Under Secretary of Defense (Technology Security Policy and Counterproliferation)] provide written plans to the Defense Threat Reduction Agency (DTRA) that include requirements, priorities, budgets and schedules for Cooperative Threat Reduction projects.

OSD Policy Response: Non-concur. We routinely provide DTRA policy guidance regarding program goals, objectives, priorities, and the development and implementation of CTR projects to achieve policy objectives. In return DTRA provides written plans as described in this recommendation for OSD review. These plans provide the type of details you recommend for project implementation.

---

We appreciate the effort your staff has put into this draft report. We look forward to continuing to work with the Office of the Inspector General on other elements of this project.

A handwritten signature in black ink, appearing to read 'L. Bronson', with a horizontal line extending to the right.

Lisa Bronson  
Deputy Under Secretary of Defense,  
Technology Security Policy and  
Counterproliferation

# Defense Threat Reduction Agency Comments



**Defense Threat Reduction Agency**  
8725 John J Kingman Road MSC 6201  
Ft Belvoir, VA 22060-6201

JUL 9 2003

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

SUBJECT: Draft Audit Report on Cooperative Threat Reduction (CTR) Program Solid Rocket Motor Destruction Facility Project (Project No. D2002LG-0219)

Thank you for the opportunity to review and comment on the draft audit of the Solid Rocket Motor Disposition (SRMD) Facility Project.

Your recommendations are directed to both the Deputy Under Secretary of Defense for Policy (Technology Security Policy and Counterproliferation) (DUSDP) and the Director, Defense Threat Reduction Agency (DTRA). We defer to Policy for the recommendations covered under Recommendation 1. Response to the recommendations addressed to DTRA are as follows:

DoD Inspector General (IG) Recommendation 2a: We recommend the Director, DTRA continue to require written acquisition plans, prior to issuing solicitations and contracts for CTR projects, in accordance with Federal Acquisition Regulation Part 7, "Acquisition Plans" to include:

- (1) Identifying risks that exist, such as former Soviet Union countries not being able to provide the necessary resources to complete the project.
- (2) Specifying procedures to mitigate those risks.
- (3) Developing a milestone chart of acquisition objectives.

DTRA Response: DTRA concurs. DTRA has been doing this since 2001, as noted in your report. Consequently, the issues and recommendations addressed in your report were implemented two years ago, and will be continued.

DoD IG Recommendation 2b: We recommend the Director, DTRA design and implement a milestone decision review and program baseline process for CTR projects, as described in DTRA Instruction 5000.3, "Implementing Instructions for Major Program Guidance." That process should include guidelines for designating an appropriate milestone decision authority commensurate with each CTR project's value, complexity, or level of Congressional interest.

DTRA Response: DTRA concurs. As noted in your report, DTRA laid the foundation for this process starting in 2000, through the use of indefinite delivery, indefinite quantity contracts and our subsequent implementation of phased contracting. These evolutionary steps in our acquisition strategies allow us to readily insert milestone decisions prior to initiation of a given phase of a project. DTRA is initiating discussions with the offices of the Under Secretaries of Defense for Policy and Acquisition, Technology and Logistics on the mechanics of a proposed decision process.

DTRA recently set up its process for major acquisition programs, and employed the process you recommended. The CTR Chemical Weapons Destruction facility project has been recently designated a DTRA major program.

DoD IG Recommendation 2c: Establish procedures to ensure the project managers in the CTR Directorate:

- (1) Maintain all necessary documents and correspondence.
- (2) Document contracting actions taken as contracting officer representatives.
- (3) Document significant conversations with representatives of the Former Soviet Union.

DTRA Response: DTRA concurs. DTRA is working on these procedures and will develop a training program to ensure their full implementation.

Thank you again for the opportunity to comment on this draft report.



Stephen M. Younger  
Director

# Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) Comments



NUCLEAR AND CHEMICAL  
AND BIOLOGICAL DEFENSE  
PROGRAMS

ASSISTANT TO THE SECRETARY OF DEFENSE  
3050 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3050

July 24, 2003

MEMORANDUM FOR INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE

SUBJECT: Draft Audit Report on Cooperative Threat Reduction (CTR) Program Solid Rocket Motor Destruction Facility Project (Project No. D2002LG-0219)

Thank you for the opportunity to review and comment on the draft audit of the Solid Rocket Motor Disposition (SRMD) Facility Project.

Your recommendations have been directed to both the Deputy Under Secretary of Defense for Policy (Technology Security and Counterproliferation) and the Director, Defense Threat Reduction Agency (DTRA). I defer to Policy for the recommendations covered under Recommendation 1. Responses to recommendations addressed to DTRA are as follows:

DoD Inspector General (IG) Recommendation 2a: We recommend the Director, DTRA prepare acquisition plans before issuing solicitations and contracts for CTR projects, in accordance with Federal Acquisition Regulation Part 7, "Acquisition Plans" to include:

- (1) Identifying risks that may exist, such as former Soviet Union countries not being able to provide the necessary resources to complete the project.
- (2) Specifying procedures to mitigate those risks.
- (3) Developing a milestone chart of acquisition objectives.

ATSD/NCB Response: I concur. As noted in your report, DTRA has been doing this since 2001 and the practice will continue.

DoD IG Recommendation 2b: We recommend the Director, DTRA design and implement a milestone decision review and program baseline process for CTR projects, as described in DTRA Instruction 5000.3, "Implementing Instructions for Major Program Guidance." That process should include guidelines for designating an appropriate milestone decision authority commensurate with each CTR project's value, complexity, or level of Congressional interest.



ATSD/NCB Response: I concur. As noted in your report, DTRA began this process starting in 2000, through the use of indefinite delivery, indefinite quantity contracts that allow for task orders which permit decision points. You also noted that DTRA implemented phased contracting to provide even further decision points during project execution.

DTRA recently set up its process for major acquisition programs, and employed the process you recommended. The CTR Chemical Weapons Destruction Facility project was among the first DTRA projects designated.

Additionally, DTRA and my new Deputy Assistant to the Secretary of Defense for Chemical Demilitarization and Threat Reduction are discussing the mechanics of a new, broader CTR decision process.

DoD IG Recommendation 2c: Establish procedures to ensure the project managers in the CTR Directorate:

- (1) Maintain all necessary documents and correspondence.
- (2) Document contracting actions taken as contracting officer representatives.
- (3) Document significant conversations with representatives of the former Soviet Union.

ATSD/NCB Response: I concur.

Thank you again for the opportunity to comment on this draft report.



Dale Klein

## **Team Members**

The Readiness and Logistics Support Directorate, Office of the Assistant Inspector General for Auditing of the Department of Defense prepared this report. Personnel of the Office of the Inspector General of the Department of Defense who contributed to the report are listed below.

Shelton R. Young  
Evelyn R. Klemstine  
Donney J. Bibb  
Michael T. Brant  
Lynne M. Champion  
Mason A. Kaur  
David L. Leising  
Susann L. Cobb