United States General Accounting Office

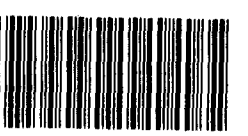
GAO

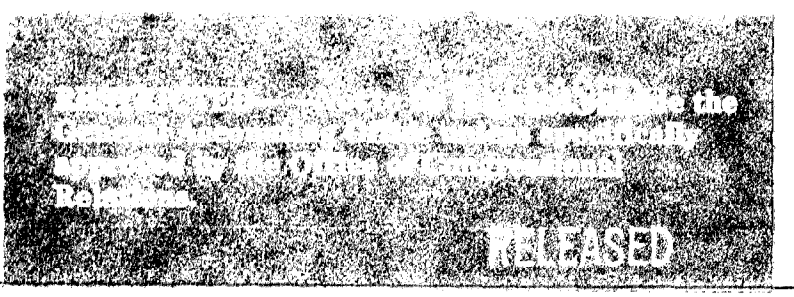
Report to the Chairman, Committee on Governmental Affairs, U.S. Senate

September 1991

ARMS CONTROL

Intermediate-Range Nuclear Forces Treaty Implementation





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United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-241519

September 12, 1991

The Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate

Dear Mr. Chairman:

This is an unclassified version of our classified report that was issued on April 10, 1991. Accordingly, some of the matters discussed in that report are limited in presentation in this report or they have been deleted entirely. We have also updated some of the information.

In response to your request, we examined U.S. implementation of the Intermediate-Range Nuclear Forces (INF) Treaty, a bilateral agreement between the United States and the Soviet Union. The treaty requires eliminating an entire class of U.S. and Soviet land-based missile systems with ranges between 500 to 5,500 kilometers (about 300 to 3,400 miles). The treaty provides for several types of on-site inspections as a means to verify compliance. The United States established the On-Site Inspection Agency (OSIA) within the Department of Defense (DOD) to conduct and coordinate the treaty's inspection provisions.

Specifically, you asked that we (1) describe OSIA's role and organizational structure, including what organizations and systems are involved in providing OSIA policy and operational guidance and (2) identify the costs and personnel associated with treaty implementation. We also agreed to provide our observations concerning OSIA's operations and treaty implementation issues that may have implications for other arms reduction agreements.

Results in Brief

The on-site inspection provisions of the treaty are carried out by OSIA, with support from numerous federal departments and agencies and several private contractors and foreign governments. Certain non-inspection related INF activities are done by other U.S. organizations. Available data show that identifiable INF implementation costs will be about $522 million for fiscal years 1988 through 1991, covering the first

3 treaty years.[1] Experiences from implementing the INF treaty have raised a number of issues that merit consideration for other arms control agreements.

Treaty Inspection Provisions

The INF treaty, formally known as the Treaty Between the United States and the Soviet Union on the Elimination of Their Intermediate-Range and Shorter-Range Missiles, was signed in Washington, D.C., on December 8, 1987.[2] The treaty includes a Memorandum of Understanding and periodic updates identifying what sites and items are covered and two Protocols on Inspections and Eliminations explaining how these will be done. The agreement also allows the parties to agree on measures to improve the effectiveness of the treaty, and several agreements of this type have been made since the treaty entered into force.

The agreement requires destroying four types of U.S. and six types of Soviet missile systems[3] and associated equipment and prohibits further production, testing, and deployment of these systems as well as future ground launched systems that would fall into the range limits. Both parties must eliminate all treaty-limited items within 3 years: the elimination deadline was May 31, 1991. The Memorandum of Understanding identified over 7,600 treaty-limited items that must be eliminated and 133 Soviet sites and 31 U.S. sites to be inspected.[4] It also identified one missile final assembly plant in the Soviet Union where the United States has established a monitoring facility, and one missile production plant in the United States where the Soviets have established a monitoring facility. The treaty also established unprecedented rights for the parties to conduct five types of on-site inspections.

[1]The INF treaty entered into force on June 1, 1988. Therefore, the first 3 treaty years cover the period June 1, 1988, through May 31, 1991. However, OSIA was created in January 1988 and because federal agencies budget and account for their costs by fiscal year (Oct. 1 to Sept. 30), we present cost and personnel data for 4 fiscal years—1988 through 1991—throughout this report.

[2]On May 27, 1988, the United States Senate consented to the agreement and the treaty entered into force on June 1, 1988.

[3]The four U.S. systems are the BGM-109G Ground Launched Cruise Missile, Pershing II, Pershing 1A, and Pershing 1B. The six Soviet systems are the SS-20, SS-4, SS-5, SS-12, SS-23, and SSC-X-4.

[4]In addition to INF facilities in the United States and the Soviet Union, the treaty covers facilities in other countries where the subject missiles and support equipment are located. For the United States, it included Belgium, Italy, the Netherlands, the United Kingdom, and the Federal Republic of Germany (West Germany). For the Soviet Union, it included the former German Democratic Republic (East Germany) and Czechoslovakia. Despite the unification of East and West Germany on October 3, 1990, the United States retains the right to inspect former Soviet facilities in that part of Germany known as East Germany. Throughout this report we refer to East and West Germany as they were known when the treaty was signed.

- Baseline. Beginning 30 days after the treaty entered into force, each side had 60 days to inspect the other's declared sites to verify the data in the Memorandum of Understanding.
- Closeout. Within 60 days after the scheduled elimination of a facility, an inspection can be conducted to verify that all treaty-limited items have been removed from the site and all INF treaty-related activities have ceased.
- Quota or short notice. For 13 years, each side is permitted to conduct inspections at designated sites to confirm the expected presence or absence of activities and items limited by the treaty. Twenty inspections are permitted each year for the first 3 years of the treaty; the number decreases over the remaining 10 years.
- Elimination. When one party destroyed certain treaty-limited items, the other party was required to monitor the process to verify the destruction.
- Continuous Portal Monitoring. For up to 13 years, each side is permitted to establish a resident inspection team at the exits of an agreed-to missile final assembly plant or former missile production facility. The inspectors are allowed to patrol the perimeter and inspect vehicles exiting the main gate (portal) to determine whether treaty-limited items are in them.

The treaty also established cooperative measures to enhance the utility of reconnaissance systems and a Special Verification Commission as a forum for U.S. and Soviet representatives to discuss compliance issues and measures to improve the effectiveness of the treaty. While the treaty's inspection regime is limited to 13 years, the treaty itself is indefinite in duration.

Treaty Status

As required by the treaty, as of June 1, 1991, all declared U.S. and Soviet treaty-limited items had been eliminated. Shorter-range missile systems were eliminated by November 1989, within the required 18-month time frame, and all remaining intermediate-range missile systems were eliminated by the May 31, 1991, deadline.[5] During the first

[5]In early 1990, the United States became aware of the existence of Soviet-produced SS-23 shorter-range missiles and launchers—items listed in the INF treaty—in Bulgaria, Czechoslovakia, and East Germany. In addition, a Soviet document provided to the United Nations cited a number of SS-23s produced in excess of those declared by the Soviet Union in the INF treaty or claimed by any of the East European countries. According to the President's report on Soviet Noncompliance With Arms Control Agreements dated February 1991, the United States has information that the Soviets provided approximately 70 SS-23s to these three countries. The United States continues to investigate the matter and is preparing a report to the Congress on the INF compliance issue.

3 treaty years, both parties had also conducted all required and allowed inspections. (See table 1.)

Table 1: INF Inspections During the First 3 Treaty Years

	U.S. inspections of Soviet facilities	Soviet inspections of U.S. facilities
Baseline	117[a]	31
Closeout	114[b]	23
Quota	60	60
Elimination	130	94
Total	**421**	**208**

[a]Represents 133 sites.

[b]Includes a 1988 closeout inspection that was determined to be invalid by the Special Verification Commission and a 1990 re-inspection of the same Soviet site.

Since the beginning of the fourth treaty year, both parties have conducted closeout, quota, and portal monitoring inspections. As of July 22, 1991, the Soviet Union had completed all closeout inspections of U.S. INF sites and the United States had completed most closeout inspections of Soviet sites. Quota inspections and continuous portal monitoring may continue for the next 10 years—through May 2001.

INF Treaty Guidance

The Arms Control Policy Coordinating Committee provides overall policy direction and oversight of treaty implementation. The Committee is a high-level interagency group chaired by National Security Council staff, with representatives from DOD, the Departments of State and Energy, the Arms Control and Disarmament Agency (ACDA), and the Director of Central Intelligence. It is supported by several interagency subcommittees and working groups, which provide guidance on specific INF issues.

Treaty interpretation, Soviet compliance determinations, and U.S. policy decisions are the responsibility of these agencies and the interagency committees. Information obtained from OSIA's on-site inspections flows into the interagency structure, which reviews Soviet compliance. The National Security Council is responsible for resolving any interagency disputes. The Special Verification Commission and other diplomatic channels are used to resolve questions and agree upon measures to improve the effectiveness of the treaty. Negotiation results are provided to the interagency community, which then formulates policy guidance for OSIA.

The Secretary of Defense is primarily responsible for providing OSIA operational guidance, as well as transmitting policy guidance formulated by the interagency mechanism. The Director of Central Intelligence is responsible for ensuring that the inspection process is supported by U.S. intelligence resources. In addition, the Federal Bureau of Investigation provides guidance on counterintelligence matters; ACDA provides recommendations on arms control policy issues; and the Department of Energy, as well as DOD, provides technical expertise on technologies and hardware for on-site inspections.

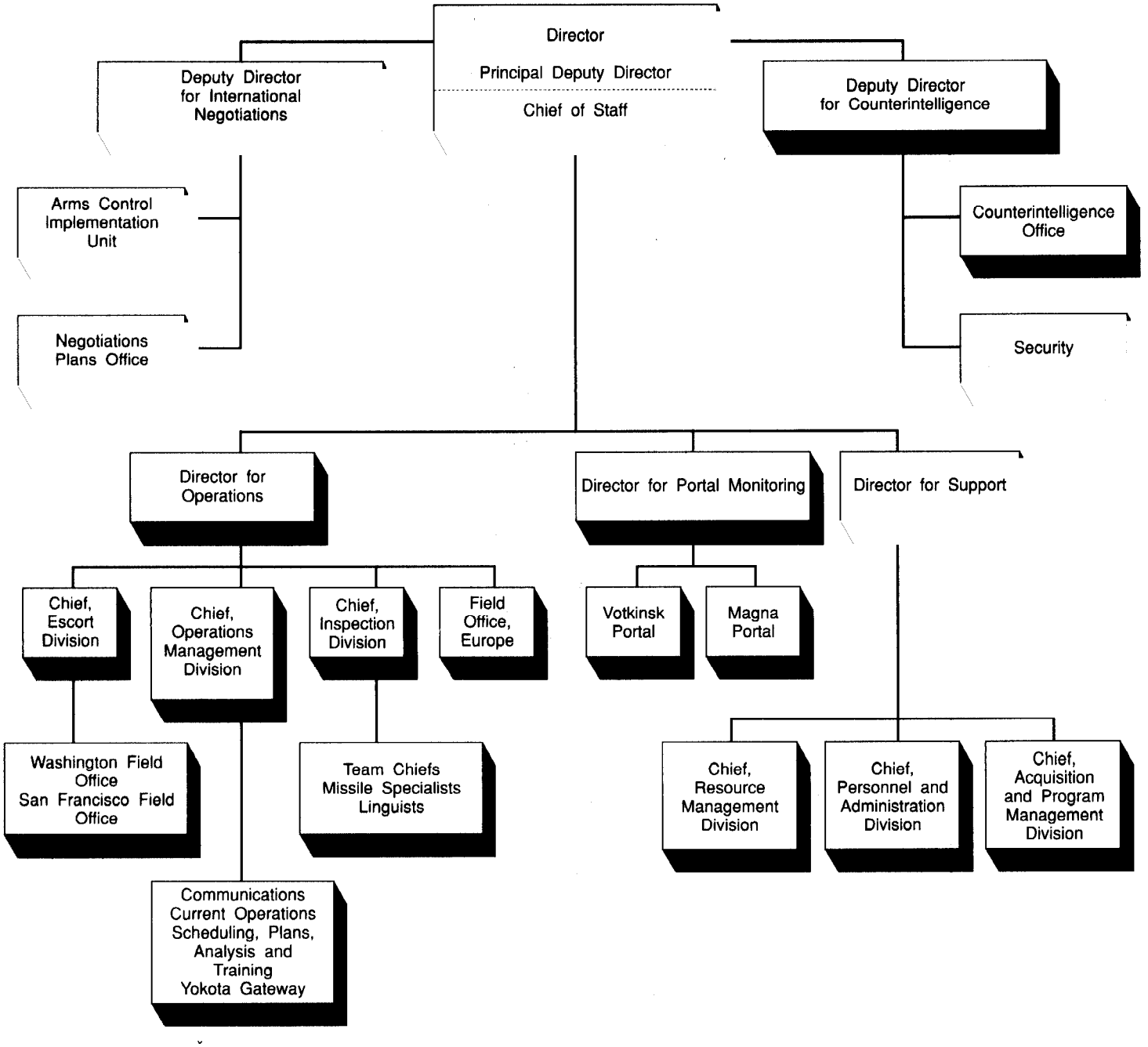
See appendix I for more complete discussions of the roles and responsibilities of the various departments and agencies involved with OSIA in implementing the INF treaty.

Organizational Structure of OSIA

OSIA is organized to conduct inspections of Soviet facilities and escort the Soviets during inspections of U.S. facilities. OSIA's Director, currently an Air Force major general, is appointed by the Secretary of Defense with the concurrence of the Secretary of State and the approval of the President. He is supported by three deputy directors who are appointed by ACDA, State, and the Federal Bureau of Investigation. Inspections and escort activities are managed by two directorates that report to the Director through the Principal Deputy Director (from ACDA). OSIA also has a substantial support directorate.

Figure 1 illustrates OSIA's organizational structure during most of the first 3 years when its primary mission was to implement the INF treaty's on-site inspection provisions.

Figure 1: On-Site Inspection Agency Organization Chart



Source: On-Site Inspection Agency, June 1990.

The Portal Monitoring Directorate managed the portal in the Soviet Union with up to 30 inspectors, most of whom were contractor personnel. This office also coordinated the Soviet's reciprocal portal monitoring site near Magna, Utah, with a detachment of OSIA personnel and contract escorts and linguists. Both portals have been in operation since July 2, 1988.

The Operations Directorate, responsible for managing all other inspection and escort activities, included the Inspection, Escort, and Operations Management Divisions, three field offices, and two gateways. The Inspection Division controlled several inspection teams that normally each consisted of 10 inspectors, many of whom were temporary duty government personnel, although most team leaders were on OSIA's permanent staff.

The Escort Division managed the escort teams. Most of the team leaders were on OSIA's permanent staff, and most team members were detailed from other agencies. Escort team members included U.S. military and civilian personnel and foreign government personnel (if the facilities were located overseas).

OSIA's organizational structure has been modified to reflect an expanding mission. As of August 1991, OSIA's responsibilities beyond INF included planning for or implementing the on-site inspection provisions of several other arms control agreements. This includes the Threshold Test Ban Treaty, the Peaceful Nuclear Explosions Treaty, the Vienna Document 1990/Confidence and Security Building Measures, the Conventional Armed Forces in Europe Treaty, the Strategic Arms Reduction Talks Treaty, and both the Chemical Weapons bilateral agreement with the Soviets and the multilateral Chemical Weapons Convention. In July 1991, OSIA was also designated the DOD executive agent for DOD support to the United Nations' Special Commission on Iraq. OSIA's current organizational structure still consists of three directorates; however, the former Portal Monitoring Directorate is a division of the Operations Directorate and OSIA's Field Office, Europe, is a separate directorate.

Appendixes II and III provide more detailed discussion of U.S. inspections of Soviet facilities and escorting Soviet inspectors at U.S. facilities, respectively.

INF Treaty Costs and Personnel Are Difficult to Identify

The costs of inspections and other treaty implementation activities are difficult to identify. Agencies did not always account for treaty-related costs separately or the information could not be provided. Most significantly, salaries are not included for full-time military personnel, some full-time civilian personnel, and all civilian and military temporary duty personnel. Available data indicate identifiable costs of about $522 million for fiscal years 1988 through 1991. Over $427 million, or about 82 percent, is DOD's costs, 34 percent of which is attributable to OSIA. OSIA's costs for the period represent about 28 percent of the identified INF implementation costs. (See table 2.)

Table 2: Identifiable Costs of INF Treaty Implementation—Fiscal Years 1988-91

Dollars in millions

	Fiscal year				
	actual		projected		Total
	1988	1989	1990	1991	costs
Department of Defense					
On-Site Inspection Agency	$24.2	$43.2	$38.9	$40.1	**$146.4**
Army	20.6	24.4	36.3	38.6	**119.9**
Air Force	18.1	17.1	6.3	11.0	**52.5**
Navy	15.5	0.5	4.5	4.5	**25.0**
Other Defense	35.8	9.5	21.9	16.2	**83.4**
Department of Energy	7.8	4.7	0.5	0.3	**13.3**
Other	30.0	21.5	14.2	15.8	**81.5**
Total	**$152.0**	**$120.9**	**$122.6**	**$126.5**	**$522.0**

Concerning personnel, most agencies and organizations could not identify the number of personnel assigned to INF-related functions. Available data show that full-time positions budgeted for INF ranged from 348 during fiscal year 1988, when the treaty entered into force, to an estimated 570 for fiscal year 1991. On average, DOD accounted for about 77 percent of these positions, over one-half of which are military personnel. OSIA has about one-half of the DOD budgeted positions.

See appendix IV for more detailed information on costs and personnel associated with INF treaty implementation.

Implications of the INF Treaty for Other Agreements

Experiences from implementing the INF treaty have raised a number of issues that merit consideration in planning and implementing other arms control agreements. This is especially important if treaties incorporate on-site inspection and verification activities similar to those permitted by the INF treaty. Following is a brief description of the important lessons learned; these and other issues are discussed in more depth in appendix V.

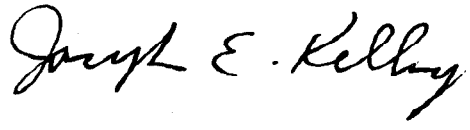
- Fully trained inspectors, escorts, and linguists need to be identified and brought on-board 4 to 6 months before a treaty becomes effective to improve the United States' ability to staff and train inspection and escort teams.
- Adequate funding is needed before treaty ratification to begin start-up efforts such as planning to conduct inspections, training personnel, and purchasing equipment.
- Prior to any agreement, U.S. contractors affected by treaty provisions must be given the opportunity to react to proposals regarding their property.

We conducted our review between January 1989 and December 1990 in accordance with generally accepted government auditing standards. As agreed with your office, we did not obtain written agency comments on this report. However, we discussed the information in the report with cognizant agency officials and have incorporated their comments as appropriate. A discussion of our scope and methodology is in appendix VI.

As arranged with your office, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to the appropriate congressional committees; the Secretaries of Defense, Energy, and State; the National Security Advisor; the Directors of the Arms Control and Disarmament Agency, Central Intelligence, the Federal Bureau of Investigation, and the Office of Management and Budget; and other interested parties.

Please contact me at (202) 275-4128 if you or your staff have any questions concerning this report. Major contributors are listed in appendix VII.

Sincerely yours,



Joseph E. Kelley
Director, Security and International
Relations Issues

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Abbreviations

ACDA	Arms Control and Disarmament Agency
DCI	Director of Central Intelligence
DOD	Department of Defense
INF	Intermediate-Range Nuclear Forces
JCS	Joint Chiefs of Staff
MAC	Military Airlift Command
NRRC	Nuclear Risk Reduction Center
OSIA	On-Site Inspection Agency
SVC	Special Verification Commission

U.S. Organization for INF Treaty Implementation

The United States created a complex organizational structure involving numerous organizations to implement the Intermediate-Range Nuclear Forces (INF) Treaty. Overall policy direction and treaty implementation oversight are provided to executive branch organizations through an interagency mechanism established by the President. The on-site inspection provisions of the treaty are carried out by the On-Site Inspection Agency (OSIA), with support from several other Department of Defense (DOD) components, federal organizations, private contractors, and five European basing country governments.[1] Implementation of non-inspection related INF treaty activities is shared by numerous other U.S. organizations.

OSIA was established as a DOD agency by Presidential directive on January 15, 1988, to implement the inspection provisions of the INF treaty.[2] It is responsible for conducting on-site inspections in the Soviet Union, the former German Democratic Republic (East Germany),[3] and Czechoslovakia; coordinating all activities related to Soviet inspections in the United States and five West European basing countries; and reporting on U.S. inspections to the interagency policy groups. On May 29, 1990, President Bush expanded the charter of OSIA to include planning for the implementation of the on-site inspection provisions of the Conventional Armed Forces in Europe agreement, Strategic Arms Reduction Talks, and the Chemical Weapons agreement (National Security Directive 41). On July 18, 1990, OSIA was tasked by National Security Directive 44 to manage inspection and on-site escort activities of the Threshold Test Ban Treaty and Peaceful Nuclear Explosions Treaty. On June 20, 1991, OSIA became responsible for U.S. inspections, evaluations, and escorts associated with the Vienna Document 1990/Confidence and Security Building Measures, which entered into force January 1, 1991. In addition to responsibilities for arms control agreements, on July 11, 1991, the Director, OSIA, was designated as the DOD executive agent for DOD support to the United Nations' Special Commission on Iraq to monitor and verify elimination of Iraq's ballistic missile capability and weapons of mass destruction.

[1]Belgium, the Federal Republic of Germany (West Germany), Italy, the Netherlands, and the United Kingdom.

[2]DOD Directive TS-5134.2, "United States On-Site Inspection Agency," describes OSIA's relationship with other agencies. It is based on National Security Decision Directive 296, dated January 15, 1988.

[3]The United States retains the right to inspect former Soviet INF facilities in that part of the Federal Republic of Germany formerly known as East Germany since the unification of East and West Germany on October 3, 1990. According to the State Department, under a 1990 stationing agreement with Germany, Soviet forces will remain at the six INF facilities in former East Germany until 1994.

The Director of OSIA is appointed by the Secretary of Defense with the concurrence of the Secretary of State and the approval of the President. The Principal Deputy Director of OSIA is appointed by the Director of the Arms Control and Disarmament Agency (ACDA). The Federal Bureau of Investigation appoints a deputy to coordinate counterintelligence support; the Department of State appoints a deputy who supervises OSIA support for the U.S. Special Verification Commission (SVC) delegation, the interagency process, and the U.S. Embassy in Moscow.

OSIA receives policy guidance formulated by the Arms Control Policy Coordinating Committee and operational guidance from DOD's Executive Committee. OSIA is represented on the U.S. SVC delegation, and the Director of OSIA serves as a technical advisor in the Arms Control Policy Coordinating Committee's Subcommittee for INF implementation.

The administration's decision to place OSIA within DOD rather than the State Department or ACDA is not clearly documented. However, according to OSIA, needed assets, experience, manpower, and other resources were more readily available in DOD. For example, (1) DOD had access to a large pool of specialists with expertise in the affected weapons systems; (2) DOD funds were available, through reprogramming, to begin planning; and (3) most facilities to be inspected were under DOD. According to OSIA, military discipline and familiarity with bases are critical to the inspection process.

Despite disagreement over which executive branch agency should provide policy direction and operational guidance to OSIA, and what congressional committee would oversee the agency, the basic organizational structure has not changed.[4] Operational support remains the responsibility of DOD. DOD also provides OSIA with policy guidance formulated by the interagency community under the overall direction of the National Security Council.

Arms Control Policy Coordinating Committee

The Arms Control Policy Coordinating Committee is the principal interagency group responsible for overseeing implementation of the INF treaty, providing policy direction, and making the requisite judgment with respect to compliance and verification. This high-level committee is chaired by National Security Council staff and includes representatives

[4]The Arms Control Authorization Act of 1989 clarified the roles of ACDA and DOD. The act specifies that ACDA provide recommendations to the interagency community on arms control policy guidance for OSIA and that DOD provide OSIA appropriate policy guidance formulated by the interagency community.

at the assistant secretary level of the Secretaries of Defense, Energy, and State; the Joint Chiefs of Staff (JCS); the Director of Central Intelligence; and the Director of ACDA. Two subcommittees and their working groups support the committee on INF implementation issues.

Subcommittee for INF Implementation

The Arms Control Policy Coordinating Committee's Subcommittee for INF Implementation considers policy issues related to treaty implementation and formulates policy guidance for OSIA and the U.S. SVC delegation. The subcommittee is chaired by National Security Council staff and includes representatives from the agencies represented on the Arms Control Policy Coordinating Committee. The U.S. representative to SVC and the directors of OSIA and the Nuclear Risk Reduction Center (NRRC) also participate. The subcommittee is supported by three working groups.

- The SVC Support Group, chaired by ACDA, is responsible for formulating the work program and guidance for the U.S. SVC delegation and preparing and coordinating guidance drawing on this work, such as providing instructions for the U.S. Embassy in Moscow on INF implementation issues that are resolved outside the SVC framework.
- The Equipment and Procedures Working Group, chaired by DOD/Office of the Under Secretary of Defense for Policy, is responsible for considering the technical characteristics of the equipment and operating procedures related to on-site inspections such as the X-ray imaging equipment for portal inspections in Votkinsk.
- The Basing Country Working Group, chaired by State, is responsible for dealing with U.S. allies and basing country issues related to Soviet inspections of INF facilities located overseas. For example, this group will discuss how the United States plans to implement U.S. inspection rights at Soviet INF facilities located in former East Germany.

Subcommittee for Verification and Compliance

The Arms Control Policy Coordinating Committee's Subcommittee for Verification and Compliance is responsible for policy matters relating to Soviet compliance with arms control treaties, including INF. It is supported by a Verification and Compliance Analysis Working Group, chaired by ACDA, which provides the technical and analytical expertise for the preparation of arms control compliance reports. For example,

the group prepares the congressionally mandated annual report, Soviet Noncompliance with Arms Control Agreements.[5]

Department of Defense

The Director, OSIA, reports to the Secretary of Defense through an Executive Committee, chaired by the Under Secretary of Defense for Acquisition, including the Under Secretary of Defense for Policy and the Chairman, JCS. Other DOD components and the military services provide personnel and other support to OSIA.

Under Secretary of Defense for Acquisition

The Under Secretary of Defense for Acquisition has primary responsibility for ensuring DOD compliance with the obligations of the INF treaty. This office also provided $325,000 to the Department of Energy to develop a system to secure data communications between NRRC and OSIA, the Office of the Secretary of Defense, and the military services. Additionally, the office has established two working groups to support its mission.

- The INF Compliance Review Group is chaired by the Acquisition office and includes representatives from Policy, JCS, and General Counsel.
- The Working Group on Implementation, chaired by Acquisition, includes representatives from Policy, JCS, Air Force, Army, Navy, Defense Nuclear Agency, OSIA, Office of the Assistant Deputy Under Secretary of Defense for Counterintelligence, Office of the General Counsel, Office of Public Affairs, Office of Legislative Affairs, Office of the Comptroller, and Defense Advanced Research Projects Agency.

Under Secretary of Defense for Policy

The Under Secretary of Defense for Policy reports to the Secretary of Defense and is primarily responsible for developing and implementing DOD policy concerning INF monitoring and verification activities, as well as policy concerning Soviet compliance. The Under Secretary is a member of the DOD Executive Committee, is represented on the Arms Control Policy Coordinating Committee, and also designates the Secretary of Defense representative to the U.S. SVC delegation. This office is responsible for transmitting policy guidance formulated by the interagency community to OSIA and other DOD components on matters of INF monitoring and verification.

[5]This report is mandated by Public Law 99-145, title X, section 1002, and amended by Public Law 100-456, title IX, 905(b).

The Joint Chiefs of Staff

JCS advises on the military aspects of implementing INF verification and monitoring provisions and provides temporary duty military personnel to fill a wide variety of functions within OSIA such as linguists and missile specialists. JCS is represented on the Arms Control Policy Coordinating Committee and its subcommittees and is a member of the U.S. SVC delegation. The Chairman is also a member of the DOD Executive Committee.

Defense Intelligence Agency

The Defense Intelligence Agency is the primary DOD agency responsible for treaty monitoring and intelligence support to the Office of the Secretary of Defense, JCS, and ACDA. The Agency provides training and intelligence support to OSIA. In addition, the Agency participates in various INF interagency policy groups, including the SVC Support Group and the Equipment and Procedures Working Group, and serves on all of the Director of Central Intelligence's treaty monitoring working groups.

Defense Investigative Service

The Defense Investigative Service is primarily responsible for providing industrial security assistance to the four defense contractors whose facilities are subject to Soviet inspections under the INF treaty. As such, its industrial security specialists are assigned at the Hercules plant near Magna, Utah; the Martin Marietta plant in Middle River, Maryland; the General Dynamics facility in San Diego, California; and the Thiokol Ammunition Plant in Marshall, Texas, to review each contractor's classified information protection plans and to ensure that the plans are carried out. These industrial security specialists also serve on OSIA escort teams, as needed.

In addition, the Defense Investigative Service is involved in granting clearances for OSIA personnel and contractors working on INF-related contracts. The Hercules plant and the Thiokol facility each are assigned one full-time industrial security specialist. At the other two contractor facilities, industrial security specialists are assigned on an as-needed basis. The Defense Investigative Service has also assigned one full-time industrial security specialist to OSIA headquarters and has plans to assign four more under proposed future agreements. The Service also participates in the intelligence community staff's Counterintelligence and Security Countermeasures Arms Control Working Group.

Defense Nuclear Agency

The Defense Nuclear Agency was tasked to provide administrative support, including civilian personnel management, finance and accounting,

budget and contracting, and other logistics to OSIA. The Agency provided $2.2 million for OSIA's start-up costs before treaty ratification. The Agency also managed DOD's research, development, and procurement of equipment to support OSIA's inspection activities. Although OSIA has assumed responsibility for many of its administrative functions, the Defense Nuclear Agency continues to provide support in the areas of civilian personnel management, finance and accounting, engineering, and computer support.

U.S. Air Force

The U.S. Air Force is responsible for withdrawing and eliminating Ground Launched Cruise Missiles and associated treaty-limited items, providing air transportation for on-site inspection teams, and facilitating on-site inspections at its INF facilities. The Air Force also provides personnel to OSIA to serve as linguists, inspectors, escorts, missile specialists, and support personnel. It also notifies the U.S. NRRC on all movement of Air Force treaty-limited items.

The Military Airlift Command (MAC), the Air Force component of the U.S. Transportation Command, provides most of the air transportation support for OSIA's inspection and escort operations. MAC flies U.S. inspection teams to and from the Soviet Union and Eastern Europe from the two OSIA forward deployment areas at Rhein Main Air Base, Frankfurt, West Germany, and Yokota Air Base near Tokyo, Japan. It also provides air transportation for U.S. escorts and Soviet inspection teams in the United States to and from the Washington, D.C., and Travis Air Force Base, California, points of entry and the inspection sites, as well in Italy to and from the Rome point of entry and Sigonella Naval Base on the island of Sicily (near the declared U.S. INF facility at Comiso).

MAC also services Soviet aircraft at certain points of entry and transports INF-related missiles and other treaty-limited items from Europe to the United States for destruction at one Air Force and two Army elimination facilities.

At Air Force sites subject to Soviet inspections, base commanders prepare and carry out site plans to meet, house, monitor, secure, control, transport, and support Soviet and OSIA teams. The Air Force also oversees General Dynamics' program for protecting sensitive programs and information during a Soviet inspection at Air Force Plant Number 19 in

San Diego.[6] The defense contractor's program plan is evaluated by resident Defense Investigative Service agents at the plant for its adequacy. The Air Force's Office of Special Investigations provides security and counterintelligence support.

U.S. Air Forces, Europe, provides temporary duty linguists and missile experts for OSIA escort teams and security and communications support. The Air Force Systems Command, Electronic Systems Division, contracted with Hughes Technical Services Corporation to install, operate, and maintain the permanent monitoring system used by OSIA at the Votkinsk portal.

U.S. Army

The U.S. Army is responsible for withdrawing and eliminating the Pershing missiles and associated treaty-limited items in accordance with the INF treaty provisions. Army Pershing missile system items are eliminated at Hausen, West Germany; Pueblo Depot Activity, Pueblo, Colorado; and Longhorn Army Ammunition Plant, Marshall, Texas. Thiokol Corporation, Martin Marietta, and Colsa Corporation assist the Army in eliminating treaty-related items. The Army details personnel to OSIA to serve as linguists, inspectors, escorts, missile specialists, and support personnel. It also notifies NRRC of all actions dealing with Army treaty-limited items.

The Military Traffic Management Command, the Army component of the U.S. Transportation Command, provides some ground transportation to inspection teams in the United States. U.S. Army, Europe, provides (1) ground transportation in Belgium, the Netherlands, and West Germany; (2) temporary duty linguists and missile experts for OSIA escort teams; and (3) security support.

At Army bases subject to Soviet inspection, base commanders prepare and carry out site plans that provide procedures to meet, house, monitor, secure, control, transport, and support Soviet inspection and OSIA escort teams. At these sites, the Army's Intelligence and Security Command personnel provide security and counterintelligence support.

U.S. Navy

Compared to the Air Force and the Army, the Navy's role in INF implementation is somewhat limited. Its primary responsibility is to ensure

[6]General Dynamics formerly produced Ground Launched Cruise Missiles and launchers.

that two contractors are prepared for Soviet inspections at their facilities—Martin Marietta's Middle River Plant in Maryland and Hercules Plant Number 1 near Magna, Utah.[7] The contractors are required to establish plans to accommodate Soviet inspections and to safeguard sensitive areas and information. The adequacy of information security plans is evaluated by resident Defense Investigative Service agents at the plants. Construction and service contracts with Hercules Corporation were awarded in April and May 1988 to upgrade the plant's physical security, provide security training, and establish security teams at the plant's exits and portal. The Navy also signed a contract with Martin Marietta for treaty compliance support in April 1988. In addition, the Navy provides personnel to OSIA to serve as linguists, inspectors, and escorts. U.S. Naval Forces, Europe, provides helicopter transportation for OSIA escort and Soviet inspection teams from Sigonella Naval Base to the U.S. INF facility at Comiso, on the island of Sicily, Italy.

U.S. European Command

Headquarters, U.S. European Command, is the focal point for all military INF notifications pertaining to Soviet inspections of INF facilities in Europe. It oversees (operationally) the various components involved and interfaces with the basing countries and U.S. embassies in the European theater. It has overall responsibility for preparing and implementing the European theater INF on-site inspection and withdrawal plans and ensuring that its components prepare and implement supporting plans.

The U.S. European Command Center disseminates all information relating to the European theater, including notifying the European basing countries' ministries of defense. The U.S. European Command also chairs the theater INF steering group, which was the focal point for planning all INF implementation in Europe. In addition, the U.S. European Command forwards after-action reports on Soviet inspections of U.S. INF facilities in Europe, prepared by its staff or its components, to OSIA and others.

U.S. Pacific Command

The U.S. Pacific Command's role in INF implementation is to provide logistical support to OSIA inspection teams going to and from the eastern Soviet Union sites through Yokota Air Force Base (near Tokyo), Japan.

[7]Martin Marietta produced the Pershing 1A launcher and Hercules Corporation produced the first stage of the Pershing II.

Yokota Air Base is the OSIA gateway where U.S. teams depart for Ulan Ude, the eastern point of entry in the Soviet Union.

Director of Central Intelligence

The Director of Central Intelligence (DCI) is responsible for INF treaty monitoring activities and intelligence support to the interagency policy process. DCI directs and coordinates all monitoring activities. This effort is staffed with members from various intelligence agencies. DCI is responsible for coordinating requirements for collection of intelligence, including National Technical Means collection activities, which are capable of monitoring both declared and non-declared INF sites to ensure that INF receives the highest practical priority and that collection resources are used efficiently. DCI is also responsible for producing Intelligence Community monitoring assessments.

DCI also interacts with the INF policy groups to keep them informed of all monitoring activities and analysis that may relate to the verification of the INF treaty. In return, DCI receives policy guidance regarding the propriety and adequacy of the monitoring activities.

DCI is also a member of the National Security Council's Arms Control Policy Coordinating Committee. Along with the Federal Bureau of Investigation and other agencies, DCI participates in reviewing lists of Soviet inspectors for U.S. acceptance.

Department of State

The State Department provides diplomatic channels for contact with the Soviet and allied governments and coordinates INF implementation activities with the U.S. embassies in the five West European basing countries, Moscow, Czechoslovakia, and former East Germany. State's Bureau of Politico-Military Affairs has primary responsibility for the Department's role in INF monitoring and verification. The Bureau coordinates State's positions with other units in the Department and keeps basing countries informed of developments concerning INF implementation. The head of the Bureau also serves as the Director of NRRC.

NRRC, through which all U.S. INF notifications are sent and received, provides the formal communications link with the Soviet Union on INF implementation. It was officially established by National Security Decision Directive 301, dated February 23, 1988, in compliance with a U.S.-Soviet Agreement on the Establishment of Nuclear Risk Reduction Centers, signed September 15, 1987. The current Director of NRRC, appointed by the President, is the Assistant Secretary for Politico-Military Affairs

in the State Department. Although NRRC is responsible for notifications on other U.S.-Soviet agreements, its primary work load since it became operational in April 1988 has been INF notifications. The Soviets have a counterpart center located in its Ministry of Defense.

State's Arms Control Implementation Unit at the U.S. Embassy in Moscow provides coordination and liaison support to the Votkinsk portal and U.S. INF inspectors and air crews coming in and out of the Soviet Union, and through the U.S. ambassador, acts as a liaison with the Soviets. The unit is staffed with four State Department and four OSIA personnel. In addition, one State Department person at the U.S. Embassy in Tokyo flies into Ulan Ude, Soviet Union, from Yokota, Japan, with the U.S. inspection teams and air crew for inspections conducted in the eastern part of the Soviet Union.

State's Office of the Legal Advisor is the official U.S. repository for the INF treaty and participates in its interpretation. State's Bureau of Intelligence and Research participates in INF monitoring through the intelligence community and acts as a conduit between the intelligence community and State policy bureaus. State is also responsible for facilitating Soviet visa applications for U.S. inspectors and air crews and issuing U.S. visas to the Soviets.

State is a member of the Arms Control Policy Coordinating Committee, as well as its subcommittees and working groups, and is represented on the U.S. SVC delegation. In addition, State coordinates its functions with OSIA through an OSIA Deputy Director, appointed by State.

Federal Bureau of Investigation

The Federal Bureau of Investigation's primary role in INF treaty implementation is to monitor Soviet inspectors' presence and conduct counterintelligence operations. As such, the largest INF impact is at the Magna, Utah, portal where up to 30 Soviet inspectors are monitoring the facility. Magna has the third largest presence of Soviets in the United States, behind the diplomatic delegations in Washington, D.C., and the United Nations in New York City, New York. To support this operation, the Bureau has had to increase staffing for its Utah area office.

The Federal Bureau of Investigation has similar counterintelligence responsibilities at the missile destruction sites subject to Soviet inspections and at the designated points of entry where Soviet inspectors pass through to the inspection sites. The Bureau participates in screening the list of Soviet inspectors and air crews for acceptance by the United

States. Furthermore, the Bureau coordinates its functions with OSIA through an OSIA Deputy Director, appointed by the Director of the Federal Bureau of Investigation. It has also detailed staff to OSIA.

Arms Control and Disarmament Agency

ACDA provides advice to OSIA on arms control policy through its participation in the interagency policy process. In order to maintain close liaison between the two agencies, a senior ACDA representative, appointed by the ACDA Director, serves as OSIA's Principal Deputy Director.

In addition, ACDA's Bureau of Strategic Programs chairs and manages the work of the SVC Support Group. Its Bureau of Verification and Implementation chairs the Verification and Compliance Analysis Working Group. Its General Counsel provides INF treaty interpretation and legal advice to the interagency groups through the SVC Support Group. ACDA is also represented on all INF-related interagency groups and is the central repository for the INF negotiating history.

To facilitate ACDA's role in the implementation of treaties and agreements in effect, a Treaty Implementation Panel has been established within ACDA. The panel is chaired by ACDA's Director, and its membership includes the Assistant Director for Verification and Implementation, other ACDA Assistant Directors, the General Counsel, the SVC representative, the Principal Deputy to OSIA, and others as appropriate.

U.S. Special Verification Commission Delegation

SVC was established under article 13 of the INF treaty "to promote the objectives and implementation of the provisions of the treaty" between the United States and the Soviet Union. SVC meets at either party's request to discuss and resolve questions of compliance and to agree on measures to improve the viability and effectiveness of the treaty, such as procedures or techniques. As of August 22, 1991, there had been 10 SVC sessions averaging about 6 weeks each since the treaty entered into force.

The head of the U.S. SVC delegation is appointed by the Secretary of State, with approval of the President. It is currently headed by an ambassador and includes about 20 members and advisors from ACDA, the Departments of Energy and State, DOD's Office of the Secretary of Defense, JCS, OSIA, and others. Logistical and administrative support is provided by ACDA and the two to four full-time U.S. SVC members

(including the head of the delegation) assigned to ACDA. Policy guidance is formulated by and received from the interagency community.

Roles and Responsibilities of Other Agencies

The Department of Energy participates in interagency analysis and policy development and, as such, is a member of the Arms Control Policy Coordinating Committee, its Subcommittee for INF Implementation, and SVC and Equipment and Procedures Working Groups. Energy is also a member of the U.S. SVC delegation and uses its laboratories in cooperation with DOD to develop technologies and hardware for INF on-site inspections such as the permanent monitoring system used by OSIA at the Votkinsk portal and the radiation detection equipment used by U.S. inspection teams during quota inspections. Under a contract with DOD's Office of the Under Secretary of Defense for Acquisition, Energy's Argonne National Laboratory also supported and developed a system to secure data communications between NRRC and OSIA, the Office of the Secretary of Defense, and the military services. In addition, Energy is responsible for handling the nuclear materials removed from the missiles subject to the treaty.

Other U.S. agencies that play a role in supporting INF implementation include the Immigration and Naturalization Service, the U.S. Customs, and the Department of Agriculture. These agencies provide all necessary assistance to OSIA at the U.S. points of entry in the processing of the Soviet inspection teams.

Roles and Responsibilities of Basing Countries

Under a December 1987 INF Basing Countries Agreement with the United States, the five European countries with U.S. INF facilities agreed to facilitate U.S. treaty implementation on their territories. As such, they are responsible for (1) issuing visas and other entry documents; (2) issuing clearance for flights transporting Soviet inspection teams; (3) waiving customs duties on inspection equipment; (4) expediting customs processing; and (5) providing food and lodging for Soviet inspectors and air crews, if requested (costs borne by the United States). Basing countries also assist the United States in providing two-way voice communications for Soviet inspectors between inspection sites and the Soviet embassy in the country. Although not specified in the agreement, these countries routinely facilitate Soviet inspections by providing in-country escorts, security personnel, and police escorts and arranging social activities; however, they do not provide any financial assistance to the U.S. treaty implementation effort.

Under the agreement, each basing country has the right to change the designated point of entry for its territory by giving the United States 6 months' notice. In addition, each country has the right to review proposed lists of Soviet inspectors and air crew members, and it may object to some on certain grounds. Each country also has the right to designate specific routings to the inspection sites.

U.S. Inspections of Soviet Facilities

The On-Site Inspection Agency (OSIA) manages and conducts U.S. on-site inspections of Soviet Intermediate-Range Nuclear Forces (INF) facilities. U.S. determination of which sites to inspect and the requirements for each mission are the responsibility of the interagency community. Using this guidance, OSIA assigns a team chief and an inspection team that is briefed and prepared to inspect that specific site. Many team members are temporary duty personnel from the military services and other Department of Defense (DOD) components, as well as from other federal agencies. The treaty requires that at least two inspectors on each team speak the language of the inspected party, for example, Russian.

Under the treaty, each party must submit separate lists of proposed (1) air crew members, (2) portal inspectors, and (3) all other inspectors. Each list, limited to 200 individuals, is subject to review and acceptance by the inspected party and the basing country, and is periodically updated. Currently, OSIA has access to a pool of over 800 inspectors, some of whom also serve as linguists.

The Inspection Process

Once the decision to conduct an inspection is made and a team is assigned, OSIA sends a notification message through the U.S. Nuclear Risk Reduction Center (NRRC) to the Soviet counterpart agency. NRRC also notifies the appropriate U.S. embassies, and OSIA alerts its field offices and other DOD components so that appropriate assistance will be provided.

Notifications for inspections must include the point of entry, the estimated arrival time and date, and the names of the inspectors and air crew members. For baseline, quota, or closeout inspections, notification must be given at least 16 hours in advance of arrival at the point of entry and must include the date and time when the inspection site will be specified. For elimination inspections, notification must be made at least 72 hours in advance and specify both the site to be inspected and whether the team will be (1) observing the process of elimination or (2) confirming the elimination of certain treaty items such as training missiles or missiles placed on static display, accidentally destroyed, or lost.

In most cases, U.S. inspection teams initially assemble at OSIA headquarters in Washington, D.C., to receive prebriefings from the team chief before departing overseas (exceptions include instances when the team chief and/or other members are at overseas locations). The team is then transported (generally by commercial flights) to one of two OSIA forward deployment areas, called "gateways"—Rhein Main Air Base, Frankfurt,

West Germany (for sites in Czechoslovakia, the former East Germany, and the western Soviet Union), or Yokota Air Base, Japan (for sites in the eastern Soviet Union). Once the entire team is assembled at the gateway, it receives substantive prebriefings concerning the site and mission and makes final preparations such as assembling necessary equipment for the inspection.

The United States, as the inspecting party, provides its own transportation to the designated Soviet point of entry. At least 6 hours before the scheduled departure, the inspecting party must provide, through its NRRC, a flight plan specifying that it is an inspection aircraft with a standing diplomatic clearance number and that it requires priority clearance processing. The U.S. team is flown by the Military Airlift Command (MAC) (usually on a C-141 cargo plane, sometimes a C-130) from the U.S. gateway to the designated point of entry closest to the inspection site (Moscow or Ulan Ude, Soviet Union; Schkeuditz, the former East Germany; or Ruzyne, Czechoslovakia).

Upon arrival at the point of entry, U.S. inspectors and air crew are met by representatives from the U.S. embassy (in the Soviet Union, inspectors are met by U.S. Embassy Arms Control Implementation Unit staff) and Soviet in-country escorts. The inspectors and air crew then proceed through Customs and Immigration, which takes about an hour, and their inspection equipment is secured in an appropriate storage facility until needed. As the inspected party, the Soviets provide parking, security protection, servicing, and fuel for the U.S. aircraft (the United States, as the inspecting party, is responsible for fuel and servicing costs). The air crew may remain at the point of entry under escort until the end of the inspection period or leave the country and return later. According to OSIA, U.S. air crews rarely stay at the point of entry, whereas Soviet air crews almost always remain there until the inspection team departs.

The inspected party provides all in-country transportation, meals, lodging, work space, and medical care (some costs borne by the inspecting party). For closeout and quota inspections, formal specification of the site to be inspected must occur between 4 and 24 hours after the team arrives at the point of entry. For baseline inspections, the treaty allows up to 48 hours for site specification. Depending on when the site is declared, the inspectors may be transported to the inspection site the same day or remain overnight at the point of entry. For baseline, closeout, and quota inspections, the Soviets have a maximum of 9 hours to transport the U.S. inspectors to the site once it is declared.

Upon arrival at the site, a preinspection briefing is given by the site escorts and the U.S. team notifies U.S. Embassy staff that it has arrived. The inspection must begin within 1 hour. The treaty allows 24 hours to conduct baseline, closeout, and quota inspections; however, this may be extended by no more than 8 hours, with the approval of the in-country escort. There is a 4-hour post-inspection period in which a formal report of inspection must be prepared (in both English and Russian) and signed by both parties (the inspection team leader and one member of the in-country escort team) and exchanged. Once this is completed, the inspection is officially over. The United States may then either declare its intent to conduct a second inspection at another site (except if the inspection was a quota in which case no follow-on inspection is allowed) or return to the point of entry (where the team may also declare a sequential inspection or depart the country). If a follow-on inspection is declared, the team is then transported to the designated site without any unjustified delay. The team must depart through the point of entry.

Upon return to the gateway, the team is debriefed and reports are prepared and forwarded to the policy community. This post-inspection process requires 1 or 2 days. Once this is completed, the team members return to their regular work sites and duties.

Baseline Inspections

Baseline inspections were conducted during the 60-day baseline period, from July 1 through August 29, 1988, to confirm data in the Memorandum of Understanding such as the number and technical characteristics of declared treaty-limited items. During this period, OSIA teams made 81 separate trips into the Soviet Union and Eastern Europe to conduct 117 baseline inspections at 133 declared Soviet sites. According to OSIA, its inspectors observed about 98 percent of the declared inventory, or 5,366 treaty-limited items. The remaining items were said to be in transit and therefore not confirmed. Inspection teams measured and weighed items at specific sites designated for this purpose to confirm technical characteristics.

During baseline inspections, the U.S. teams identified inaccuracies in the information presented by the Soviets in the Memorandum of Understanding. For example, some site diagrams were inaccurate and some treaty-limited items differed from the type shown in photographs. However, those inaccuracies have now been corrected. Other questions and comments raised by the United States included the right to take notes (in one instance a Soviet escort took notes out of an inspector's hands

without his permission) and the availability of adequate telephone service to contact the U.S. embassy.

Each inspection team consisted of 10 members, with senior military officers with previous Soviet-related experience as team chiefs. Other members included Soviet area specialists, Russian linguists, missile specialists, and other experts. Of the pool of 200 inspectors, 170 were assigned on a temporary duty basis. According to OSIA officials, there were many administrative problems associated with managing this large pool of temporary personnel. For instance, OSIA had difficulty ensuring that required skills were available for particular inspections.

Closeout Inspections

Each party has the right to conduct inspections to verify that all treaty-limited items have been removed and all treaty-prohibited activities have ceased at declared missile operating bases and missile support facilities (other than missile production facilities). Closeout inspections are only permitted if conducted within 60 days after the scheduled date of the elimination of the facility.

As of July 22, 1991, the United States had conducted 124 closeout inspections of Soviet missile operating bases and missile support facilities and found only one closeout violation. During a 1988 closeout inspection of the Saryozek Missile Operating Base in the Soviet Union, OSIA inspectors observed two SS-12 missiles and therefore did not consider all INF activities to have ceased. The official inspection report included a photograph and a statement on the ambiguity (as allowed by the treaty). The issue was raised in the Special Verification Commission (SVC), and SVC determined the inspection was invalid. In the President's December 1988 report Soviet Noncompliance With Arms Control Agreements, the U.S. administration issued a finding that (1) the presence of these treaty-limited items at a facility declared ready for "elimination" was in violation of the treaty and (2) the removal of these missiles from the boundaries of the Saryozek elimination facility (an adjacent site) also constituted a violation of the treaty.

With respect to the first matter, the report stated that the United States would reinspect the missile operating base to establish that it is ready to be closed out. For the second matter, the report stated that the United States had told the Soviets that they could rectify the situation by keeping all shorter-range missiles within the current boundaries of the elimination facility or adjusting the boundaries, as permitted by the treaty. The Soviets corrected the noncompliance by redefining the

boundary of the adjacent INF elimination facility to include the area where these missiles were found. On January 21, 1991, the United States reinspected the Saryozek Missile Operating Base and officially declared it closed-out.

Quota/Short Notice Inspections

A specified number of quota inspections of designated sites are allowed each treaty year and are to continue for 13 years after the treaty entered into force. Twenty such inspections are permitted each year for the first 3 years, 15 per year for the following 5 years, and 10 per year during the final 5 years. These inspections are restricted to declared or formerly declared sites (except missile production and closed out elimination facilities). They were established to help ensure treaty compliance, and they include verifying the accuracy of the number of treaty-limited items declared to be at a facility, such as a missile operating base or support facility.

The treaty requires at least 16 hours' advance notification before arrival at the point of entry for a quota inspection. Follow-on inspections are not permitted after a quota inspection—the inspectors must return to the point of entry and, within 24 hours, leave the country.

Team members for quota inspections include government specialists in the weapon system subject to inspection, as well as specialists from the private sector, and teams have included the same team chief who conducted the baseline inspection. Inspectors have the right to inspect the entire site, including interiors of structures, containers, and vehicles large enough to contain a treaty-limited item. For containers large enough to contain a treaty-limited item, external inspection consists of visual observation, measurement of dimensions, and use of radiation detection devices.[1] External visual observation, including measuring, is allowed for containers and structures not large enough to contain a treaty-limited item. Inspection team members are also permitted to patrol the site perimeter and monitor the exits while the site is being inspected. The treaty allows 24 hours to conduct a quota inspection, which may be extended up to 8 hours if approved by the in-country escort.

The United States conducted its first quota inspection in September 1988. During the first 3 years of treaty implementation, the United

[1]Radiation detection devices are permitted to be used only at former SS-20 missile bases that have been converted to SS-25 missile bases.

States conducted all allowable quota inspections (20 each year). Since the beginning of the fourth year of treaty implementation, the United States had conducted 2 of the allowed 15 inspections as of July 22, 1991. According to OSIA officials, the United States intends to conduct the maximum number of inspections allowed throughout the life of the treaty.

Elimination Inspections

All treaty-limited items were to be eliminated within 3 years—that is, no later than May 31, 1991. The treaty also required each party to observe the other's elimination of missiles, launchers, and support equipment. In addition, each side had the right to confirm the elimination of training items and items eliminated by being placed on static display, accidentally destroyed, or lost.

The treaty provided for reductions in phases. For example, all shorter range missiles were to be eliminated within 18 months. Also, no later than 29 months after the treaty entered into force (by November 1, 1990), the number of deployed intermediate range missiles for each party could not exceed the number capable of carrying 180 warheads.[2]

The Soviets began eliminations on July 22, 1988, with OSIA inspectors present. The Soviets initially established eight elimination sites—three of which discontinued activities in late 1988—to destroy treaty-limited items. Only one type of missile was destroyed at any particular site. As of the end of the first 3 treaty years, OSIA had conducted 130 elimination inspections and the Soviets had destroyed their missiles by explosive demolition, launching-to-destruct, or cutting. Elimination inspections lasted from 2 days to over 4 weeks. Although the treaty permitted up to 20 inspectors to participate, OSIA generally sent only one 10-person team. Occasionally, upon completion of an elimination inspection, the same team traveled to another site to conduct a closeout inspection.

During the first 6-month period of the treaty, up to 100 intermediate range missiles could have been eliminated by launching and 72 SS-20s were eliminated by this method. As of November 1989, all 957 declared

[2]The Soviet SS-20 missile is capable of carrying three warheads as opposed to the U.S. Pershing II and Ground Launched Cruise Missile that have a single warhead.

Soviet shorter range missiles (718 SS-12s and 239 SS-23s) had been eliminated.[3] As of September 1990, the Soviets had eliminated three types of its intermediate range missiles—6 SS-5s, 80 SSC-X-4s, and 149 SS-4s. According to OSIA, the last Soviet INF treaty-limited item was eliminated on May 29, 1991.

Portal Monitoring at Votkinsk

On July 2, 1988, the United States began continuous portal monitoring inspections at the Votkinsk Machine Building Plant, Soviet Union, where SS-20s were assembled and where the SS-25 intercontinental ballistic missile (not covered by the treaty) currently is assembled. The treaty allows continuous monitoring for at least 3 years and up to 13 years, unless the Soviets discontinue the final assembly process for 12 consecutive months.

Up to 30 U.S. inspectors are allowed on-site to carry out the portal monitoring provisions of the treaty. The U.S. inspectors at Votkinsk are on duty 24 hours a day, 365 days a year. The facility is managed, on average, by 4 to 5 OSIA staff, with the assistance of 18 to 25 contract personnel.[4] (Prior to March 1990, representatives from the Department of Energy's Sandia National Laboratories were also at Votkinsk to assist in installing the permanent monitoring system equipment.) The team includes contract linguists. U.S. inspectors patrol the facility's 4.1 kilometer perimeter on foot or on skis in winter (there is no road around the plant) and check all exiting vehicles capable of holding treaty-limited items (all are rail cars). Inspection procedures include measurements, visual checks, and imaging.[5] Eight times per treaty year, the United States has the right to select a canister, require the Soviets to open it, and measure the second stage of the missile within the canister. The United States was not satisfied with the measuring device tested and, therefore, these checks have been only visual.

[3]A number of Soviet-made SS-23s were discovered in Eastern Europe in March 1990, and the press reported in November 1990 that several Soviet-made SS-12s were in Iraq; however, these were not included in the data provided by the Soviets in the Memorandum of Understanding. According to the Arms Control and Disarmament Agency, during INF negotiations, the Soviets never stated that they had transferred any missiles to their allies. The United States is currently investigating the issue.

[4]Two full-time contractors are also stationed at OSIA's Frankfurt field office, Rhein Main Air Base, West Germany, to facilitate shipments of equipment and supplies to Votkinsk.

[5]During SVC meetings, both parties agreed not to exercise the right to weigh items in exchange for the right to inspect all vehicles large enough to contain an SS-20 missile or Pershing II first stage, regardless of weight. Each party implemented this on a provisional basis until SVC signed the Memorandum of Agreement in December 1989.

The monitoring equipment at Votkinsk is collectively referred to as the Votkinsk Portal Monitoring System. This continuous monitoring system and its prototype—the Technical On-Site Inspection system—were designed by Sandia National Laboratories, Department of Energy, and the Electronic Systems Division, Air Force Systems Command. It includes one rail exit at the portal for inspecting vehicles, gates and traffic lights to control traffic, video equipment, infrared break-beam profilers for dimensional screening, an X-ray imaging device (CargoScan[6]), a data collection center, a storage warehouse, three inspection team buildings, one administration building, and a back-up power generator.

A great deal of time was required to set up full operations in Votkinsk, and initially only rudimentary equipment (tape measures, flashlights, and cameras) was available for monitoring. In July 1988, when the site began operations, only a few OSIA inspectors were assigned. The contracting process for site personnel did not begin in time due to the lack of funding prior to treaty ratification. Hughes Technical Services Company contract employees, hired to install, operate, and maintain the continuous monitoring system and to perform most of the routine inspection duties, began arriving in mid-August 1988 but were not fully trained for inspections until late September 1988.

Several factors contributed to the delay in establishing the permanent monitoring system. Lack of congressional funding prior to treaty ratification prevented OSIA from beginning construction. On-site preparations also took more time than anticipated due to apparent disagreements on the Soviet side between the Ministry of Defense Industries and the Ministry of Foreign Affairs and poor weather conditions. In addition to funding problems, it took Sandia National Laboratories much longer than initially estimated to develop and field the U.S. monitoring system, primarily a non-damaging X-ray device. This system was determined necessary by the policy community to verify that the Soviets were not illegally shipping SS-20s out of Votkinsk. The Soviet SS-25 and SS-20 have physically identical first stages, and the Soviets refused to remove SS-25s from their canisters to permit the United States to verify second stage dimensional differences. According to OSIA, the high technology system may be more sophisticated than necessary, and it was developed for a high volume plant rather than the situation at Votkinsk where, on average, only one missile per week exits the portal. There is also the

[6]CargoScan is a registered trademark of the Bechtel Corporation.

potential for equipment reliability problems, especially in the severe cold weather.

Further delays were caused by Soviet opposition to the proposed equipment. Because the technology is so complicated, it was hard to reach agreement on the characteristics, procedures for use, and documentation for the X-ray imaging system. Also, the United States was not satisfied with the Soviet-designed Stage Measuring device tested to measure the second stage of the missile inside a canister. The issues were discussed at numerous SVC sessions. The problems with the X-ray were eventually resolved; however, as of August 1991, the Stage Measuring System was not in operation.

In March 1990—nearly 20 months after the treaty entered into force—the United States began using the CargoScan. (Prior to this, infrared break-beam profilers for dimensional screening of vehicles and manual/visual measurement were the only equipment used to image vehicles and they often did not work.) However, from March 1 to March 10, 1990, the Soviet Union refused to permit the United States to exercise its INF treaty rights to use the newly operational CargoScan non-damaging image producing equipment to image three Soviet missile canisters exiting Votkinsk.

On April 4, 1991, the United States and the Soviet Union signed an amendment to the December 1989 Memorandum of Agreement covering the general use, manufacture, purchase, examination, repair, storage, technical characteristics, and methods of use for the Stage Measuring System. According to the Arms Control and Disarmament Agency, this will enable the United States to exercise its last remaining unimplemented INF verification right. The agreement specifies that (1) the Soviet Union will manufacture the system for measuring the length and diameter of the second stage of the SS-25 missile and (2) the parties will contract for the United States to purchase no fewer than three systems. According to OSIA, as of August 7, 1991, the United States was working to finalize the terms of an agreement to purchase the system from a Soviet firm, and once this is completed the Soviets have 120 days to provide the systems.

As of August 2, 1991, 210 declared missiles had exited the portal, an average of one per week, and 25 canisters had been opened for inspection since operations began. In addition, since the United States began operating the CargoScan in March 1990, 91 missiles had been imaged as of August 2, 1991.

The United States is responsible for paying most costs in connection with the portal monitoring activities such as work space, equipment, food, furniture, and other supplies. Some costs are borne by the Soviets in connection with reciprocal agreements for payment of some Soviet operating costs at its portal near Magna, Utah, by the U.S. side. The Soviets constructed four buildings, including housing and offices for the U.S. team. The United States built the Data Collection Center.

The Votkinsk operation requires a large amount of logistical support. For example, MAC flies into Moscow once every 3 weeks to deliver supplies and transport inspectors going to or from the portal. Nine other flights were made into the Soviet Union carrying cargo—primarily equipment—for the portal. Four trips were made around September 1988 and the others were made in 1989.

The U.S. Embassy in Moscow coordinates with the Soviets for delivery of the cargo and maintains direct telephone links with OSIA portal inspectors. The Embassy also provides support for two inspectors from Votkinsk during their weekly visits to the Embassy.

Escorting Soviet Inspectors at U.S. INF Facilities

The On-Site Inspection Agency (OSIA) provides escort teams and makes certain arrangements for Soviet inspections of U.S. Intermediate-Range Nuclear Forces (INF) facilities in Belgium, West Germany, Italy, the Netherlands, the United Kingdom, and the United States.

When the Soviet Union intends to conduct an inspection, OSIA is notified through the U.S. Nuclear Risk Reduction Center (NRRC). For inspections in Europe, NRRC also contacts U.S. embassy officials in the basing countries who, in turn, notify the respective ministries of foreign affairs. OSIA notifies critical Department of Defense (DOD) and civilian agencies which, in turn, inform and activate all concerned activities under their control. OSIA also notifies its field offices through its operations center. The National Military Command Center provides the communications link to the U.S. military commands and services, as well as other agencies. OSIA directly contacts its field offices and provides hard copy notification of all Soviet inspection activity to all organizations involved in INF implementation. As appropriate, the U.S. European Command also relays messages to the European basing countries' ministries of defense.

Notifications must be received at least 16 hours in advance of the estimated time of arrival at the point of entry for baseline, closeout, and quota inspections. The United States and the Soviet Union must provide each other with a 30-day notice of an intent to conduct eliminations, and the Soviets are required to give 72 hours' notice before arrival in country for these inspections. Portal monitoring inspections are continuous at the Hercules Plant Number 1 near Magna, Utah, but inspectors rotate about every 4 weeks.

Once the point of entry is known, preparations begin at U.S. INF facilities accessible from that location. Site commanders or contractors are responsible for protecting information, material, and activities at their facilities. Basing countries also provide security personnel and police escorts. Each site subject to inspection must also have plans to accommodate the Soviets, such as providing a telephone link to the embassy, housing, food, security, and transportation.

Upon arrival at the point of entry, Soviet inspectors and air crew are met by representatives from the Soviet Embassy and in-country escorts. The inspectors and air crew then proceed through customs and immigration. Basically, the same procedures discussed in appendix II apply to Soviet inspections of U.S. facilities. The status of Soviet inspections of U.S. INF facilities and some unique differences are described in the following sections.

Baseline Inspections at U.S. Sites

OSIA escorted 31 Soviet inspection teams at 18 sites in the United States and 13 sites overseas during the July to August 1988 baseline period. The Soviet inspection teams accounted for all declared U.S. treaty-limited items, including 677 intermediate range missiles and 169 shorter range missiles. At the overseas locations, OSIA escort teams also included personnel from the basing country government.

Closeout Inspections

The Soviets completed 31 closeout inspections of all U.S. INF sites on July 23, 1991. Seven inspections were conducted during the first treaty year. Five sites were closed before baseline inspections began—four in the United States and one in Europe—therefore, the Soviets conducted both baseline and closeout inspections at the same time. The Soviets conducted no closeout inspections during the second treaty year. Twenty-three closeouts were conducted during the third treaty year and eight closeouts were conducted during the fourth treaty year.

Quota/Short Notice Inspections of U.S. Sites

The Soviets conducted their first quota inspection in September 1988, at a Pershing missile operating base in West Germany. During the first 3 treaty years, the Soviets conducted the maximum number of quota inspections allowed (20 per year). As of the end of July 1991, the Soviets had conducted 1 of the 15 quota inspections allowed during the fourth treaty year.

Because only 31 U.S. INF facilities are inspectable, some sites have been subject to more than one Soviet quota inspection. Including the 31 baseline inspections and the 61 quota inspections conducted as of July 1991, several sites had been inspected four or more times. This is a burden to these sites because operations are halted and the sites are essentially closed to normal activities while the Soviets are there.

Elimination Inspections

The United States had four elimination sites—three in the United States, where most treaty-limited items were destroyed, and one in West Germany. All Air Force Ground Launched Cruise Missiles and launchers were eliminated at Davis-Monthan Air Force Base, Tucson, Arizona. The remaining three sites eliminated the Army's Pershing missile system treaty-limited items. At the Pueblo Depot Activity, Pueblo, Colorado, Pershing missiles and launchers were destroyed; the Longhorn Army Ammunition Plant, Marshall, Texas, also destroyed missiles; and the Equipment Maintenance Center, Hausen, Frankfurt, West Germany, destroyed launchers.

The Soviets began observing U.S. eliminations in September 1988 at Longhorn, Texas; the first item, a Pershing 1A, was destroyed by static firing and crushing. Eliminations of the Ground Launched Cruise Missile system at Davis-Monthan were conducted around-the-clock for 2 days. The missiles and launchers were destroyed by cutting them into pieces. However, the length of elimination periods for Pershing eliminations at Pueblo depended on the number of missiles to be destroyed and environmental conditions. The longest elimination period, as of October 1990, had been 15 days. Pershing missiles were destroyed by explosive demolition or burning, the solid fuel was burned during a static firing, and the missile canister was then crushed. Sometimes, however, the firings had to be delayed 3 to 4 days because of environmental restrictions. The most common delaying factor was wind velocity and direction beyond prescribed limits.

At the end of the 3-year elimination period, OSIA had provided escorts for 94 elimination inspections. All 169 U.S. Pershing 1A shorter range missiles had been eliminated by November 1989, within the 18-month deadline. Several U.S. missiles had also been rendered inoperable and placed on display. According to OSIA, all U.S. INF treaty items were eliminated by May 6, 1991. The last Pershing II was eliminated at Longhorn on May 6, 1991, and the last Ground Launched Cruise Missile was eliminated at Davis-Monthan on May 1, 1991.

Portal Monitoring at Magna

The Soviet Union began continuous monitoring operations at the Hercules Corporation Bacchus Works, near Magna, Utah, portal on July 2, 1988. Preparing the Magna site required a tremendous amount of work by several different agencies. Hercules' planning and preparation began after the treaty was signed in December 1987. Construction started in May 1988 and was completed in December 1989. To secure operations, a fence and a road were built around the perimeter. Permanent housing for the Soviets was built between October 1988 and April 1989 (OSIA is providing funds to lease this building). The Navy provided funds and oversight for these contracts; Hercules managed portal construction through subcontractors.

A permanent OSIA detachment is stationed at Magna to coordinate treaty implementation activities with Hercules and to provide around-the-clock support and assistance to the up to 30 Soviet inspectors monitoring the facility. The office is staffed with 16 U.S. government personnel, and it relies on contractor support to cover day-to-day operations. OSIA hired a contractor to augment its military linguists with 10 Russian speaking

linguists. Another contractor provides 34 escorts for the Soviet inspectors. These escorts are the 24-hour a day counterparts to the inspectors at the portal and they transport the Soviets for official and leisure activity within the designated local travel area.

Magna has the third largest presence of Soviets in the United States, behind the diplomatic delegations in Washington, D.C., and the United Nations in New York City, New York. As such, security in the area has been increased. For example, OSIA has a contract with the West Jordan Public Safety Department to provide security at the Soviet housing complex. Thirteen police officers were added to this city function to provide two officers on duty around-the-clock. The Federal Bureau of Investigation has increased staffing in the area to monitor the Soviet inspectors and conduct counterintelligence investigations. The communications security posture in the Magna area has also been enhanced.

Costs and Personnel to Implement the INF Treaty

In addition to the On-Site Inspection Agency (OSIA), numerous other Department of Defense (DOD) components, State Department units, federal agencies, interagency groups, and five basing country governments play a role in the Intermediate-Range Nuclear Forces (INF) treaty implementation. Therefore, OSIA's costs and its assigned personnel represent only part of the total federal resources devoted to INF implementation. Other agencies have also incurred significant costs.

However, not all cost and personnel data directly associated with INF implementation were readily available. Principally, this was because most agencies did not track the data or separately identify INF-related costs in their budgets. For example, the costs of full-time military personnel, some full-time civilian personnel, and all temporary duty personnel associated with implementing the INF treaty were not charged to INF implementation. We also identified other costs that could not be readily quantified but relate to INF implementation. In addition, the Central Intelligence Agency declined to provide us all cost and personnel data.

We identified, to the extent possible, the costs and personnel resources expended or budgeted by the principal organizations for INF implementation for fiscal years 1988 through 1991. We also projected some of OSIA's costs for the remaining 10-year life of the treaty (fiscal years 1992 to 2001) based on OSIA's estimates of certain costs associated with inspections.

First Year Funding Problems

No funding was provided by the Congress before ratification of the INF treaty. As a result, funding for INF implementation either was absorbed within the budgets of the implementing DOD components or, for new activities, was provided through reprogrammed funds. For example, the Defense Nuclear Agency provided OSIA about $2.2 million in operations and maintenance funds for start-up efforts. The Air Force also provided OSIA almost $9.9 million in procurement funds and $4.9 million in research and development funds for portal monitoring equipment before treaty ratification. Subsequently, the Congress approved a DOD Program Budget Decision, reprogramming over $82 million in operations and maintenance funds for fiscal year 1988 INF implementation—$67 million of which was released to OSIA. However, OSIA only used about $20 million, in part, because the treaty was ratified later than initially projected. In fiscal year 1989, $3.8 million in military construction funds was provided to OSIA through the Defense Nuclear Agency to construct OSIA facilities.

Start-up funding for some non-DOD agencies was also a problem. For example, the Air Force funded certain Central Intelligence Agency and Department of Energy activities, and DOD transferred funds to the Federal Bureau of Investigation in fiscal year 1988.

INF Implementation Costs

DOD's Costs

The INF implementation costs identified by DOD agencies for fiscal years 1988 through 1991[1] are estimated to be about $427 million (see table IV.1). DOD categorized its costs as inspections, portal monitoring, missile eliminations, and other (such as administrative and communications equipment). Inspections and portal costs accounted for about 44 percent of the total DOD costs, while eliminations and other costs accounted for about 30 and 26 percent, respectively. After fiscal year 1991, costs should decrease because baseline and elimination inspections will have been completed by June 1, 1991, and only portal operations, closeout inspections, and a reduced number of quota inspections may continue under the treaty provisions. During fiscal years 1988 to 1991, the largest single cost element is estimated to be for the U.S. Army Pershing missile eliminations—over 25 percent of the total cost for the period. As could be expected, OSIA is estimated to have the highest amount of total costs, about $146.4 million, or 34 percent, of DOD's total cost.

[1]The INF treaty entered into force on June 1, 1988. Therefore, the first 3 treaty years cover June 1, 1988, through May 30, 1991. However, OSIA was created in January 1988, and because federal agencies budget and account for their costs by fiscal year (Oct. 1 to Sept. 30), we present cost and personnel data for 4 fiscal years—1988 through 1991—throughout this appendix.

Table IV.1: DOD's INF Treaty Implementation Costs by Category

Dollars in millions

	Fiscal year actual		projected		
	1988	1989	1990[a]	1991[a]	Total
Inspections					
On-Site Inspection Agency	$11.6	$20.8	$14.8	$13.6	**$60.8**
Air Force	16.7	12.1	1.3	1.7	**31.8**
Army	8.6	1.3	1.5	1.6	**13.0**
Navy	7.3	•	4.0	4.0	**15.3**
Other Defense[b]	2.2	2.4	2.6	2.8	**10.0**
Subtotal	**$46.4**	**$36.6**	**$24.2**	**$23.7**	**$130.9**
Portal					
On-Site Inspection Agency	$5.4	$15.9	$12.3	$13.0	**$46.6**
Navy	8.2	0.5	0.5	0.5	**9.7**
Subtotal	**$13.6**	**$16.4**	**$12.8**	**$13.5**	**$56.3**
Eliminations					
Air Force	$1.4	$5.0	$5.0	$9.3	**$20.7**
Army	12.0	23.1	34.8	37.0	**106.9**
Subtotal	**$13.4**	**$28.1**	**$39.8**	**$46.3**	**$127.6**
Other					
On-Site Inspection Agency	$7.2	$6.5	$11.8	$13.5	**$39.0**
Office of the Secretary of Defense	0.3	0.4	0.4	0.4	**1.5**
Defense Nuclear Agency	1.5	1.2	1.1	1.1	**4.9**
Other Defense	31.8	5.5	17.8	11.9	**67.0**
Subtotal	**$40.8**	**$13.6**	**$31.1**	**$26.9**	**$112.4**
Total	**$114.2**	**$94.7**	**$107.9**	**$110.4**	**$427.2**

[a]Data for fiscal years 1990 and 1991 are based on DOD's fiscal year 1991 budget, the latest DOD budget available at the time of our review.

[b]Includes costs for the Defense Investigative Service and the Defense Intelligence Agency.

Non-DOD Agencies' Costs

Non-DOD agencies' costs for fiscal years 1988 through 1991 are estimated to be about $95 million and include communications, security, monitoring, and other equipment, as well as personnel, travel, and administrative expenses (see table IV.2). Equipment costs were the major expense. For example, the State Department purchased $1 million in communications equipment for the Nuclear Risk Reduction Center (NRRC). The Department of Energy spent $8.3 million for the equipment used by OSIA at the Votkinsk portal monitoring facility.

Table IV.2: Other Agencies' INF Treaty Implementation Costs

Dollars in millions

	Fiscal year				
	actual		projected		
	1988	1989	1990	1991	Total
Energy	$7.8[a]	$4.7[a]	$0.5	$0.3	**$13.3**
State[b]	1.9	0.9	1.1	1.2	**5.1**
Special Verification Commission[c]	0.1	0.4	0.3	0.5	**1.3**
Other	28.0	20.2	12.8	14.1	**75.1**
Total	**$37.8**	**$26.2**	**$14.7**	**$16.1**	**$94.8**

[a]The Air Force funded $2.5 million for the handling of nuclear material.

[b]Only includes costs for NRRC, the Bureaus of Politico-Military Affairs and European and Canadian Affairs, and the Legal Advisor.

[c]Only includes costs for the Arms Control and Disarmament Agency's permanent positions for the U.S. delegation.

OSIA's Costs

OSIA's costs, excluding those for military personnel, are presented in table IV.3. OSIA's start-up costs for the part-year in fiscal year 1988 were $24.2 million; its costs averaged about $41 million per year for the next 3 fiscal years. OSIA's major costs (over 58 percent of its total) were for travel and per diem, airlift, and portal contracts.

Table IV.3: OSIA's INF Treaty Implementation Costs

Dollars in millions

	Fiscal year actual 1988	1989	projected 1990	1991	Total	Percent of total
Operation and maintenance						
MAC airlift	$5.1	$10.7	$9.2	$8.9	**$33.9**	23
Portal contracts	4.3	10.6	7.6	8.0	**30.4**	21
Travel	4.5	5.3	5.5	5.0	**20.3**	14
Miscellaneous contracts	2.5	2.0	3.4	5.0	**13.0**	9
Reimbursable to Soviets[a]	2.5	3.9	2.3	2.3	**11.0**	8
Rent and utilities	0.6	1.4	2.5	2.5	**7.0**	5
Civilian pay	0.2	1.3	2.4	2.6	**6.5**	4
Field operations[b]	0.4	0.8	1.8	1.6	**4.6**	3
Supply and equipment	1.5	1.2	1.0	0.8	**4.5**	3
Linguists	0.2	0.3	0.5	0.5	**1.5**	1
Maintenance and printing	0.1	0.2	0.5	0.5	**1.3**	1
Training	•	•	0.5	0.5	**1.0**	1
Soviet expenses[c]	0.1	0.4	0.3	0.3	**1.1**	1
Representational	0.1	0.1	0.1	0.1	**0.4**	[d]
Miscellaneous[e]	0.8	0.7	0.4	0.5	**2.4**	2
Subtotal	**$22.9**	**$38.9**	**$38.0**	**$39.1**	**$138.9**	
Military construction	$ •	$3.8	$ •	$ •	**$3.8**	3
Procurement	$1.3	$0.5	$0.9	$1.0	**$3.7**	3
Total	**$24.2**	**$43.2**	**$38.9**	**$40.1**	**$146.4**	

NOTE: Totals may not add due to rounding. Percentages may not add to 100 due to rounding.

[a]Includes expenses for landing and navigation fees, fuel, and quarters for U.S. personnel at the Votkinsk portal that the United States may have to pay for. The United States and the Soviet Union are still negotiating whether to reimburse each other for these expenses or to offset them in-kind.

[b]Includes operating expenses for OSIA field offices at Rhein Main Air Base, Travis Air Base, and Washington Dulles; the Yokota gateway; and travel expenses for field office personnel.

[c]Includes meals, lodging, and local transportation for Soviet inspectors that are paid for by OSIA.

[d]Less than 0.5 percent.

[e]Includes the installation of a local area network and reimbursements to U.S. Air Forces, Europe, and U.S. Army, Europe.

Future OSIA Inspection Costs

On the basis of data provided by OSIA, we projected some of OSIA's costs for the remaining 10 years (fiscal years 1992 to 2001) of the INF treaty inspection regime. Other agencies were not able to provide cost estimates for implementing the INF treaty beyond fiscal year 1991.

According to the INF treaty provisions, after the third treaty year, only portal monitoring, quota, and closeout inspections are permitted. For 10 years, beginning June 1, 1991, each side will be entitled to 15 short notice (quota) inspections during the first 5-year period and 10 short notice inspections for the second 5-year period. On the basis of OSIA's estimates of its average airlift and travel costs during fiscal year 1989 for a short notice inspection, we estimate that it will cost $7.5 million in constant 1989 dollars to conduct all 125 inspections allowed through May 2001.

OSIA estimated the costs to operate the Votkinsk and Magna portals at about $12.4 million annually. Assuming portal operations continue for the remaining 10 years, this would be an additional $124 million in constant 1989 dollars for the life of the treaty.

INF Requires Substantial Personnel Support

Implementing agencies have not included military and most civilian personnel costs in their cost estimates. Thus far, the costs of these personnel have been absorbed by the parent agency of the personnel involved. As shown in table IV.4, a large number of military personnel are devoted to INF implementation. While the costs are important, enough personnel with the skills required to support the INF treaty must be available. This is especially important as the United States reduces its military forces. Sufficient numbers of skilled personnel must be retained to support agreements such as the Conventional Armed Forces in Europe and the Strategic Arms Reductions. According to OSIA officials, these treaties will require many of the same skills as those needed for INF but perhaps 10 times as many personnel. Some skills, such as linguists, may be in short supply.

From fiscal year 1988, when the treaty was in force only 4 months, through fiscal year 1991, when eliminations were to be completed, the number of government civilian and military authorized positions identified by all agencies ranged from 348 to 570 positions, averaging 484 annually. These numbers do not include a large number of temporary duty and other personnel who spent only a portion of their time on INF duties.

Table IV.4: U.S. Government Civilian and Military Authorized Positions Associated With INF Treaty Implementation

	Fiscal year							
	1988		1989		1990		1991	
	actual				projected			
	military	civilian	military	civilian	military	civilian	military	civilian
Department of Defense								
On-Site Inspection Agency	116	16	133	44	152	71	151	68
Air Force	28	•	38	•	62	•	62	•
Army	11	18	11	18	11	22	11	22
Defense Nuclear Agency	1	10	4	8	2	19	2	19
Office of the Secretary of Defense	8	5	8	6	8	6	8	6
Joint Chiefs of Staff	3	•	3	•	3	•	3	•
Navy	19	10	•	•	•	•	•	•
Defense Investigative Service	•	3	•	3	•	3	•	4
Other DOD	2	35	2	48	2	76	2	90
Department of Energy	•	23	•	12	•	2	•	1
State Department[a]	1	12	1	12	1	12	1	12
Special Verification Commission[b]	•	2	•	2	•	3	•	4
Other	•	25	•	104	•	104	•	104
Total	**189**	**159**	**200**	**257**	**241**	**318**	**240**	**330**
Fiscal year totals	**348**		**457**		**559**		**570**	

[a]Only includes positions in State's Nuclear Risk Reduction Center which primarily handles INF notifications. State was unable to provide the number of personnel involved in other INF activities.

[b]Only includes the Arms Control and Disarmament Agency's (ACDA) permanent positions for the U.S. SVC delegation. ACDA did not identify all personnel associated with treaty implementation.

OSIA's authorized positions include linguists, missile specialists, inspection team chiefs, and other technical experts and administrative support for INF implementation. However, these positions do not include about 30 staff from other DOD components or agencies, who are assigned to OSIA to perform liaison, counterintelligence, and other functions. They also do not include contract personnel. OSIA has numerous service support contracts supporting its mission. Table IV.5 shows some examples of OSIA contract personnel used at the Votkinsk and Magna portals.

Table IV.5: OSIA Contract Personnel at Votkinsk and Magna Portals

Type of service	Number of personnel
Escorts for the Magna portal	34
Security guards for the Soviet quarters near Magna	2
Linguists for the Magna portal	10
Technicians at the Votkinsk portal	25
Total	**71**

OSIA has difficulty acquiring people with the skills it needs. For instance, linguists have been a continual problem. OSIA now has 39 Russian linguists on its staff. Other OSIA staff also qualify as Russian language linguists and serve a dual role on inspection and escort teams. Other military temporary duty personnel also serve as linguists. However, during the baseline period of the INF treaty, OSIA had difficulties finding the number of linguists needed and could not assign as many as it would have liked to inspection and escort teams. OSIA has primarily used military linguists on the teams; however, at the Magna portal, 10 civilian contract linguists assist OSIA in escorting the Soviets.

Costs and Personnel Not Included in Agencies' Estimates

Other resources associated with INF treaty implementation have not been included or recognized in agencies' estimates. Chief among them is the cost for military and most civilian personnel. These costs are significant and will increase if other treaties are agreed to with on-site inspection provisions. For example, on the basis of DOD's fiscal year 1991 weighted average for military personnel costs, we estimate that including military personnel costs for the first 3 treaty years would increase total implementation costs by about $20 million, or about $6.6 million, annually.[2]

Some costs are more difficult to quantify. Certain activities done under the INF treaty are part of an organization's normal duties. As noted previously, INF activities involve many personnel who devote only a portion of their time. Quantifying the number of personnel for such activities would require extensive record searches for each agency. The following are some of these other activities.

[2]Based on the current officer-to-enlisted ratio, DOD estimates that the weighted average cost for a military personnel for fiscal year 1991, which includes salary and benefits, would be about $30,400 a year. The average number of military positions assigned to INF for the 3 treaty years was 218. Multiplying $30,400 by 218 equals about $6.6 million.

- The Federal Bureau of Investigation has devoted agents to INF-related work at U.S. INF sites in addition to work contributed by authorized INF positions. This was primarily for counterintelligence activities when the Soviets inspected U.S. INF sites other than Magna, Utah.
- Overseas, approximately 60 Air Force personnel, each for 2 to 3 days, are sent to closed missile bases to prepare for Soviet inspections. According to Air Force officials, site preparation support for active bases is even higher; for example, about 300 personnel are needed to prepare for a Soviet inspection of the Comiso (Italy) missile operating base. The personnel costs for site preparation support are not included in the Air Force's estimate of INF costs. Similarly, the Air Force has not included personnel costs associated with site preparation at bases in the United States. Even less information was available from the Army, but Army officials said that they had similar personnel costs for site preparation support.
- Temporary duty personnel from various agencies augment OSIA inspection and escort teams on an ad hoc basis. OSIA has a pool of about 600 such personnel. Depending on the type of inspection they are assigned, these temporary duty personnel could be on loan to OSIA from 5 days to 3 weeks, with the lending agencies absorbing the personnel costs.
- Two subcommittees of the Arms Control Policy Coordinating Committee and various working groups directly support the INF treaty. Personnel costs for these interagency groups are absorbed by the executive agencies. Similarly, ACDA and State absorb the costs of the individuals that each appoints to serve as an OSIA Deputy Director. ACDA also absorbs its costs for supporting the U.S. SVC delegation and assigning nonpermanent staff to the delegation.
- Several Department of State bureaus, offices, and embassies provide a wide range of services in support of INF. Embassy staff in the basing countries coordinate with government officials and have established Basing Country Working Groups and other forums to address INF issues. NRRC provides official INF communications between the United States and the Soviet Union on a 24-hour basis. The Bureau of Intelligence and Research assists in treaty compliance. The U.S. Embassy in Moscow, Arms Control Implementation Unit, provides logistical support for the portal and U.S. inspectors and air crews and acts as a liaison with the Soviets. State does not track its INF-related costs and personnel separately and Department officials were only able to provide estimated costs for some INF activities such as the Arms Control Implementation Unit in Moscow, for fiscal years 1990 and 1991, and NRRC.
- Other resources not counted by agencies include personnel at military bases who provide transportation and security support during a Soviet inspection and file reports at the completion of an inspection, and the

U.S. SVC delegation members who convene in Geneva, Switzerland, as needed. As of August 1991, these personnel had met with the Soviets ten times for an average of 6 weeks per session. The U.S. Customs Service, the Immigration and Naturalization Service, and the Department of Agriculture process Soviet teams when they arrive in the United States at a point of entry. This is part of their normal duties and is not reported as an INF cost. In addition, Department of Energy staff have made trips to the Soviet Union for baseline measurements using radiation detection equipment and installing and operating the CargoScan; these costs are also not included.

- National Technical Means (such as satellite reconnaissance and remote sensing equipment) is used by the United States for various purposes and provides the majority of the information needed to determine whether the Soviet Union is complying with the terms of the INF treaty. Because these activities would exist without INF, estimating the costs attributable to INF is difficult, but need to be considered in estimating INF treaty costs.
- Though not a U.S. cost, basing country governments absorb the costs of providing in-country escorts, security personnel, and police escorts to facilitate Soviet inspections.

Certain Costs Cannot Be Quantified

INF activities also incur costs that cannot be measured. Closing and reopening bases in anticipation of Soviet inspections may negatively affect the readiness of U.S. forces. As noted previously, preparing a site for a Soviet inspection requires a large amount of resources and takes priority. It affects training, exercises, billeting, and transportation and, in effect, closes the base for several days.

The use of strategic cargo planes to ferry U.S. inspection teams back and forth to the Soviet Union may affect the Military Airlift Command's ability to respond to other contingencies. For example, for a quota inspection of a Soviet facility, the United States has two aircraft ready (one backup). When these aircraft, specifically designed for transporting military cargo, are diverted to transport inspection teams they are not available to perform other missions.

Finally, a Congressional Research Service study[3] stated that it is inevitable that Soviet inspectors, through on-site inspections, will have access to sensitive information that the United States would rather not

[3]On-site Inspections in Arms Control: Verifying Compliance with INF and START (Oct. 30, 1989).

reveal and that is not covered by the treaty. This can be considered an intangible cost to the United States.

Implications of the INF Treaty for Other Agreements

Although a number of problems were encountered in implementing the Intermediate-Range Nuclear Forces (INF) treaty, including the lack of resources, these matters were eventually resolved, and implementation has generally been a success. A number of lessons were learned that should be considered in planning and implementing other arms control agreements that incorporate on-site inspection and verification provisions similar to those of the INF treaty. Such provisions are included in several arms agreements, including the Conventional Armed Forces in Europe Treaty, the Strategic Arms Reduction Talks Treaty, the Nuclear Testing Treaties, and the Chemical Weapons agreements.

A Better Method for Resolving Treaty Disputes May Be Necessary

Questions have been raised about the effectiveness of the Special Verification Commission (SVC), which was established under INF as a forum for resolving compliance issues and improving the viability and effectiveness of the treaty. Most of SVC's sessions related to establishing inspection procedures and the use of monitoring equipment at the Votkinsk portal. The negotiation process was slow. For example, it took over 18 months—more than half the 3-year elimination period—to complete the Memorandum of Agreement, the authoritative document for inspection equipment and procedures and other administrative arrangements for all inspections. According to the Department of Defense (DOD), this was due to apparent Soviet attempts to limit U.S. treaty rights through definition of equipment and procedures.

An informal agreement by both parties to implement provisions as they were agreed on proved to be awkward because no official document was prepared detailing what was agreed on and there was no assurance that these provisions would be included in the final agreement. U.S. government agencies were reluctant to divulge what had been informally agreed on in the negotiations. Further, the U.S. European Command wanted quicker feedback from SVC's negotiating process. It was also awkward for U.S. inspection teams when the Soviets mentioned the new agreements and the inspectors had no document to refer to.

Inspectors and Linguists Need to Be Identified and Readily Available

Experiences with INF indicate the need to identify and train inspectors, escorts, and linguists who can be used in implementing other agreements. Personnel need to be brought on-board 4 to 6 months before a treaty becomes effective to improve the United States' ability to staff and fully train inspection and escort teams. Although more complex than previous agreements, execution of the INF inspection provisions is relatively simple when compared to requirements under a strategic

nuclear arms reduction agreement, which will require more inspections at more sites—baseline, quota, portal, and elimination—and limit the number of systems, instead of eliminating an entire class of missile. Multiple treaties will also require many more personnel. According to DOD, early estimates were that up to 10 times more inspectors will be needed for a Conventional Armed Forces in Europe agreement.

The On-Site Inspection Agency (OSIA) has been training additional inspectors beyond its INF requirements in response to its expanding mission. As of August 1991, OSIA's responsibilities beyond INF included planning for or implementing the on-site inspection provisions of several other arms control agreements. This includes the Threshold Test Ban Treaty, the Peaceful Nuclear Explosions Treaty, the Vienna Document 1990/Confidence and Security Building Measures, the Conventional Armed Forces in Europe Treaty, the Strategic Arms Reduction Talks Treaty, and both the Chemical Weapons bilateral agreement with the Soviets and the multilateral Chemical Weapons Convention. In July 1991, OSIA was also designated the DOD executive agent for DOD support to the United Nations' Special Commission on Iraq.

In carrying out these additional duties, OSIA's work force is estimated to triple or quadruple, with the remainder being detailed or loaned from other departments and agencies. The number of qualified Russian linguists available during the INF baseline period proved barely adequate, and because resources are still limited, OSIA has contracted for civilian linguists at the Magna portal. Other treaties will require more personnel and other languages. Those requiring multiple languages would place a great strain on the United States' ability to provide a sufficient number of linguists.

Section 1014 of the fiscal year 1990 DOD Authorization Act requires OSIA to establish a database of potential inspectors, both government and nongovernment personnel, with necessary technical or linguistic skills that may be called upon to support on-site inspections. OSIA has begun to establish such a database. Although OSIA prefers to staff its inspection teams with military personnel, limiting its search to active and retired military may not yield the required number of personnel and may not satisfy the intent of the act. Efforts to identify personnel from other government agencies and the private sector with the requisite skills should help in planning future agreements.

As of December 5, 1990, OSIA's database included 1,168 individuals—1,058 inspectors, 32 escorts, and 78 linguists. The list of inspectors

includes 955 individuals from several federal government agencies[1] and 213 contractors, primarily from the Department of Energy. The lists of escorts and linguists are limited to DOD personnel. The escorts are from OSIA and the linguists are primarily from the military services. As of August 19, 1991, OSIA's database had been expanded to 2,385 inspectors and escorts, of which 174 were qualified as linguists.

Obtaining personnel with the necessary technical knowledge and skills may become more difficult as DOD reduces its troop strength in accordance with future treaties, budgetary constraints, or the current emphasis to reduce the U.S. overseas military presence. Over 15,000 military and civilian positions associated with the weapons systems eliminated under the INF treaty were abolished; other treaties may result in even greater reductions. In addition, OSIA has had to rely on a large number of temporary duty personnel to conduct inspection and escort activities. As personnel resources become more limited and inspection requirements become more strenuous, OSIA's ability to obtain temporary duty personnel, especially from the services, will be increasingly difficult. Care must be taken to ensure that the resources are available to conduct treaty inspections and provide escorts, as necessary. This may require stationing personnel in Europe and elsewhere for this specific reason to ensure that treaty provisions can be carried out.

Funding Is Needed Before Treaty Ratification

Prior to INF treaty ratification, funding was not available to begin start-up efforts such as planning for inspections and purchasing equipment. Early funding would have allowed more time to prepare for the large number of initial baseline inspections that began shortly after the treaty entered into force and that had to be completed within a very short time period. Full operation of the portal facility was also delayed because funding was not immediately available.

Portal Monitoring Is Expensive

Portal monitoring under the INF treaty is the most costly on-site inspection activity. The typical OSIA annual operating cost for one pair of portals under the treaty is about $12.4 million, $9.2 million of which is for Votkinsk. Over $32 million has also been spent by the Air Force and the Department of Energy on special monitoring equipment at Votkinsk. Costs to improve security at Magna have been several million dollars.

[1]Includes the Departments of Defense, State, and Energy; the Arms Control and Disarmament Agency; the Federal Bureau of Investigation; the Environmental Protection Agency; and the U.S. Geological Survey.

OSIA spends a large percentage of its budget on contracted technical support services, including inspectors, linguists, and escorts, at Votkinsk and Magna.

More complex and encompassing treaties, such as reducing strategic nuclear forces, will include more than one permanent portal monitoring facility for each party. A single facility in the Soviet Union under a Strategic Arms Reduction Talks agreement is estimated to cost the United States as much as $30 million for initial setup and $12 million to operate each year.

Complete Cost Information Is Not Available

A realistic estimate of how much it has actually cost to implement the INF treaty is not available. INF has involved numerous organizations other than OSIA, which provide both direct and indirect support. Many agencies do not track costs specifically for treaty implementation, and much of the funding has come from existing budgets. Other treaties will involve even more agencies and personnel, and costs will be greater. Also, as arms control agreements require more resources, the cognizant organizations will be less able to absorb the costs. To identify all resources devoted to implementing a treaty, each agency with a role would have to track and report its costs, including the number of personnel, for each treaty.

In an October 1990 memorandum, the Office of Management and Budget requested that DOD, the Departments of State and Energy, the Federal Bureau of Investigation, the Central Intelligence Agency, and the Arms Control and Disarmament Agency provide and justify estimates for certain arms control implementation-related expenses beginning with their budget submissions for fiscal year 1992. Implementation expenses were defined as funds budgeted to plan, prepare for, or carry out on-site inspections and other compliance activities required by arms control agreements. Except for direct counterintelligence expenses, this requirement does not include costs for intelligence activities.

Coordinating Information Collected From Multiple Treaties Would Be Useful

Currently, the U.S. government does not have a single national database for information related to the monitoring of Soviet and U.S. inspections. OSIA conducts inspections of Soviet facilities and collects information; the information is turned over to another agency, which prepares and controls the inspection reports. OSIA also prepares reports on its escort activities. Although OSIA officials said they have access to these reports, at the time of our review, OSIA did not have them all. OSIA officials told

us that it is beneficial for team members to have prior inspection reports. In addition, when other treaties that have on-site inspection activities are agreed to, comparing reports for the same or similar sites will be most useful. Access to information collected from one or more inspection teams would enhance the United States' ability to monitor and track movements at inspection sites.

Contractors Affected by Treaty Provisions Need to Be Consulted

Defense contractors subject to Soviet on-site inspections have raised concerns that warrant consideration. Under the INF treaty, four U.S. contractor facilities are subject to on-site inspections for up to 13 years. Two contractor facilities are subject to quota or short notice inspections, one is subject to elimination inspections, and another is host to the Soviet portal monitoring facility. Overall concerns include (1) protection of other contractor operations from Soviet espionage penetration, (2) costs of relocating and securing operations outside inspectable areas, (3) costs of hosting Soviet and related personnel, and (4) their firms' competitiveness for future U.S. contracts given the Soviet presence. Contractors have also expressed their dissatisfaction with the level of consultations that took place prior to signing the treaty. At the INF portal monitoring facility near Magna, Utah, the contractor was told that this facility was not likely to be chosen. Nevertheless, it was, and facilities and equipment planned for use on other missile programs were within the designated portal area. According to the contractor, this was not necessary and could have been avoided if sufficient time were given to prepare. To help minimize these problems, the contractors must be involved in the decision process and must be given the opportunity to react to proposals regarding their plants and property.

Provisions Need to Be Made for Disposing of Excess Equipment and Property

INF treaty implementation raises questions on the follow-on use of INF bases, facilities, and non-treaty limited equipment. Property and facilities must be disposed of or provisions made for reuse. For example, there are over 200 vehicles for towing the Pershing launcher that do not have to be destroyed. These were bought specifically for the Pershing and, according to Army officials, the total cost was over $47 million. At the time of our review, the Army had no plans to use them.

OSIA spent $3.8 million to build a field office facility at Rhein Main Air Base, West Germany, in support of the INF treaty. If and when other treaties are ratified, additional facilities will probably be required. According to OSIA, it will continue to use Rhein Main as a gateway as long as the facilities are available (estimated to be until 1993 or 1994).

Alternatives to constructing new facilities for implementing future treaties could include using existing bases and facilities that are now scheduled to be closed for inspection activities, elimination sites, or housing. Renting or obtaining space from North Atlantic Treaty Organization allies could also be considered.

Transportation and Housing Requirements Need to Be Considered

Using U.S. military cargo planes to transport INF inspection teams and to retrograde missiles to the United States for destruction requires the use of the Military Airlift Command's (MAC) strategic airlift and may not be cost-effective. Implementing more complex and encompassing treaties, particularly multiple agreements, will place an even greater burden on its strategic airlift capacity. Currently, MAC provides airlift for U.S. inspection teams traveling to Moscow from Frankfurt on C-141 cargo aircraft. Command officials in Europe suggested using smaller, passenger aircraft to economize on costs. Plans must be made to ensure that MAC has adequate capacity to support treaty requirements and still meet its other military requirements. Other alternatives could be considered for future treaty implementation such as using regularly scheduled commercial flights for routine trips to the Soviet Union. The Soviets used such flights into Washington, D.C., for rotating inspectors during eliminations. In response to MAC's increased airlift requirements in the Persian Gulf in 1990, OSIA officials stated that it began using commercial transportation for trips to the Soviet Union to conduct elimination inspections because those could be scheduled in advance. However, OSIA still relies on MAC for time-sensitive inspections such as a quota inspection, in order to comply with treaty time requirements.

Housing personnel in Frankfurt, West Germany, has been a problem. Frankfurt is the gateway for U.S. inspectors traveling to and from most of the Soviet sites and the point of entry for Soviet inspections in West Germany, where most of the U.S. INF overseas facilities are located. Often U.S. inspection team members have to stay off base in housing leased by OSIA. When the Soviet inspectors and their air crews arrive, they and their escorts are housed in on-base facilities for security reasons. This displaces other U.S. military personnel and their dependents. Although OSIA has recently added an on-base housing facility by renovating an old Army battalion building, it will alleviate the problem only for the short term. In the longer term, with additional arms control treaties, housing in Frankfurt could still be a problem, especially if OSIA decides to allow accompanied tours for its personnel stationed in Frankfurt. Off-base housing is difficult to find in the Frankfurt area, especially during certain times of the year when the city is hosting fairs and

conventions. Consideration should be given to using another location as a gateway and/or point of entry in West Germany or providing funds to build additional housing.

Scope and Methodology

Our work was conducted in the United States, West Germany, and the United Kingdom. In the United States, we interviewed officials and reviewed records at the On-Site Inspection Agency (OSIA), the Department of Defense, the Federal Bureau of Investigation, the Central Intelligence Agency, the Departments of Energy and State, and the Arms Control and Disarmament Agency, including the U.S. Special Verification Commission (SVC), to determine their role in the Intermediate-Range Nuclear Forces (INF) treaty implementation. We held discussions with two defense contractors whose facilities are subject to Soviet inspections and a private contractor who provides escorts for the Soviets in Utah to obtain their views on treaty implementation issues.

We visited OSIA field offices at Dulles Airport, Washington, D.C., and Travis Air Force Base, California, and the Ground Launched Cruise Missile destruction site at Davis-Monthan Air Force Base, Tucson, Arizona. We also toured the Soviet portal at Hercules Plant Number 1, near Magna, Utah, and a former Pershing launcher production facility at Martin Marietta, Middle River, Maryland.

Our work in Europe was conducted at OSIA's Frankfurt field office, the major U.S. military commands, selected U.S. INF facilities, and U.S. Embassies in Bonn, West Germany, and London, England, as well as the German and British Ministries of Defense. In Germany, we interviewed officials and reviewed records at OSIA; U.S. European Command Headquarters, Stuttgart; U.S. Air Forces, Europe, Ramstein; and U.S. Army, Europe, Heidelberg. We also met with base commanders and toured U.S. INF facilities at a Pershing missile operating base, a Pershing launcher destruction site, and Ground Launched Cruise Missile operating bases in West Germany and the United Kingdom.

We also reviewed selected reports on U.S. inspections of Soviet facilities and U.S. escort of Soviet inspectors and internal and external reports on INF issues. However, certain documents and records were not made available to us. We were not provided access to relevant National Security Decision Directives, information on the issues being discussed in SVC, or most of the U.S. inspection reports. We also had limited access to intelligence agency officials, who play a key role in carrying out the INF treaty.

Our work was conducted from January 1989 through December 1990. In addition, we updated certain information during July and August 1991. Our work was conducted in accordance with generally accepted government auditing standards.

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