Approved For Release 2008/10/08 : CIA-RDP86M00886R001800090005-2

DOE/ISA/CTN-84-003

SECRET

National Security Information
Unauthorized Disclosure Subject to Criminal Sanctions

This document consists of 8 pages.
This is copy 302 of 392 copies. Series A.

ctn

critical technologies newsletter

Department of Energy/
Office of International Security Affairs

March 1984

Inside:

STIC tutorial
DOE's role in MCTL process

Derivative Classifier: Michael E. Busse, IT Division Special Security Officer.
Classified by NFIB memo 9.1/36 DTD 12/21/78.
Declassify on: OADR.

SECRET/WNINTEL

contents

technology transfer

2 STIC: mission, functions, and products (U)

4 DOE MCTL team continues work on Sec. 17 (U)

8 Distribution

credits

Published by:
Politico-Military Security Affairs Division of the Office of International Security Affairs, US Department of Energy

DOE Project Manager:
J. Robert Cutter, 202-252-2155

Editor:
Jill Warren

Managing editor:
Barbara Canavan

Design and production:
Kathi Geoffrion Parker

Composition and printing:
Los Alamos National Laboratory
Information Services Division

Correspondence:
Editors
Critical Technologies Newsletter
P.O. Box 503
Los Alamos NM 87544

Phone:
FTS 843-6922 or 1-505-667-6922

STIC: mission, functions, and products (U)

25X1

STIC (the Scientific and Technical Intelligence Committee), one of the key organizations in the technology transfer arena, was born from a recognition of the importance of making continual assessments of foreign scientific and technical strengths and weaknesses, particularly in the Soviet Union, to support national security policy.

Under guidance from the Director of Central Intelligence (DCI), a committee structure was designed to focus and task Intelligence Community collection assets against scientific and technical intelligence issues and to provide for technical assessments of foreign technologies.

This early intelligence committee structure was subordinated to the US Intelligence Board (USIB), which has since evolved into the National Foreign Intelligence Board (NFIB) and the present DCI committee structure (Fig. 1). Through this structure, the Intelligence Community can better direct intelligence collection through SIGINT, COMIREX, and HUMINT and produce finished intelligence and assessments for national level consumers through its production committees, of which STIC is one (the others being EIC, WSSIC, JAEIC, and TTIC).

Mission

Though STIC has been in existence for 20 years, its mission was updated and redescribed in DCI Directive for Foreign Scientific and Technical Intelligence (18 June 1982) as follows: "The Committee will advise and assist the Director of Central Intelligence in the discharge of his duties and responsibilities with respect to production, coordination, and evaluation of intelligence on foreign scientific and technical developments and will promote the effective use of Intelligence Community resources for this purpose."

To fulfill this mission, STIC draws its primary membership from the NFIB community and supplements this expertise with associate members from other governmental departments that have overlapping interests with the Intelligence Community (Fig. 2).

Functions

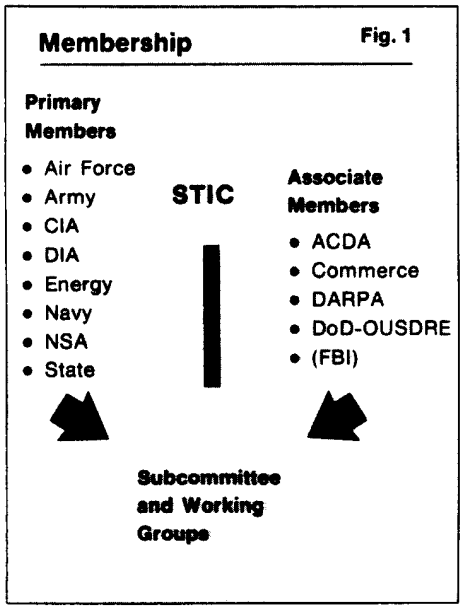
STIC is functionally organized into an Executive Planning Group, the parent committee, a Scientific and Technical Collection Subcommittee (STIC-C), and 19 Working Groups (Fig. 3), 4 of which directly support the Collection Subcommittee.

Glossary

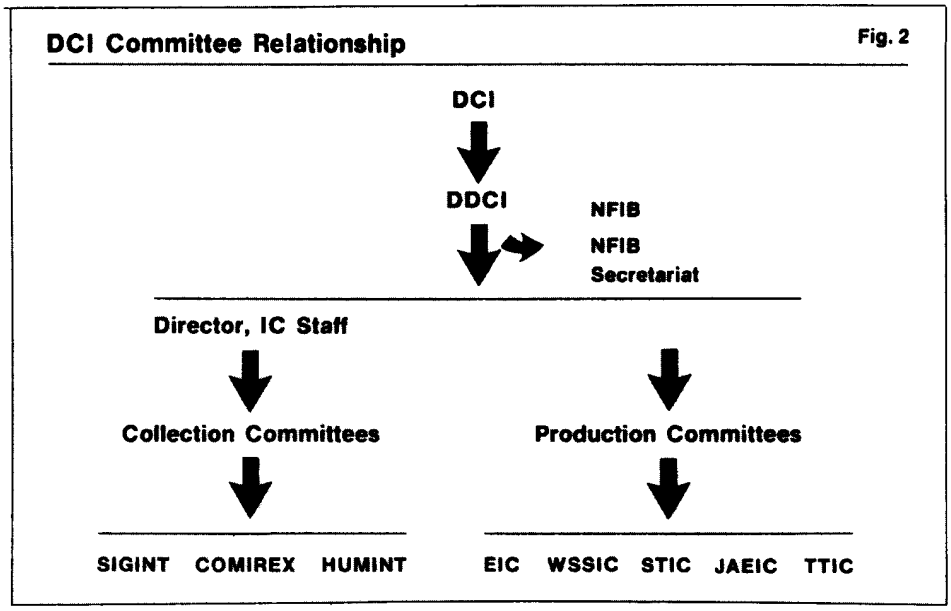
ACDA	Arms Control and Disarmament Agency
COMIREX	Commitee on Imagery, Requirements, and Exploitation
DCI	Director of Central Intelligence
EIC	Economic Intelligence Committee
EW	Electronic Warfare
HUMINT	Human Intelligence Committee
IC	Intelligence Community
JAEIC	Joint Atomic Energy Intelligence Committee
LASINT	Laser Intelligence
NFIB	National Foreign Intelligence Board
OUSDRE	Office of the Under Secretary of Defense for Research and Engineering
PRC	People's Republic of China
S&T	Science and Technology
SIGINT	Signals Intelligence Committee
STIC	Scientific and Technical Intelligence Committee
TTIC	Technology Transfer Intelligence Committee
WSSIC	Weapons & Space Systems Intelligence Committee

technology transfer

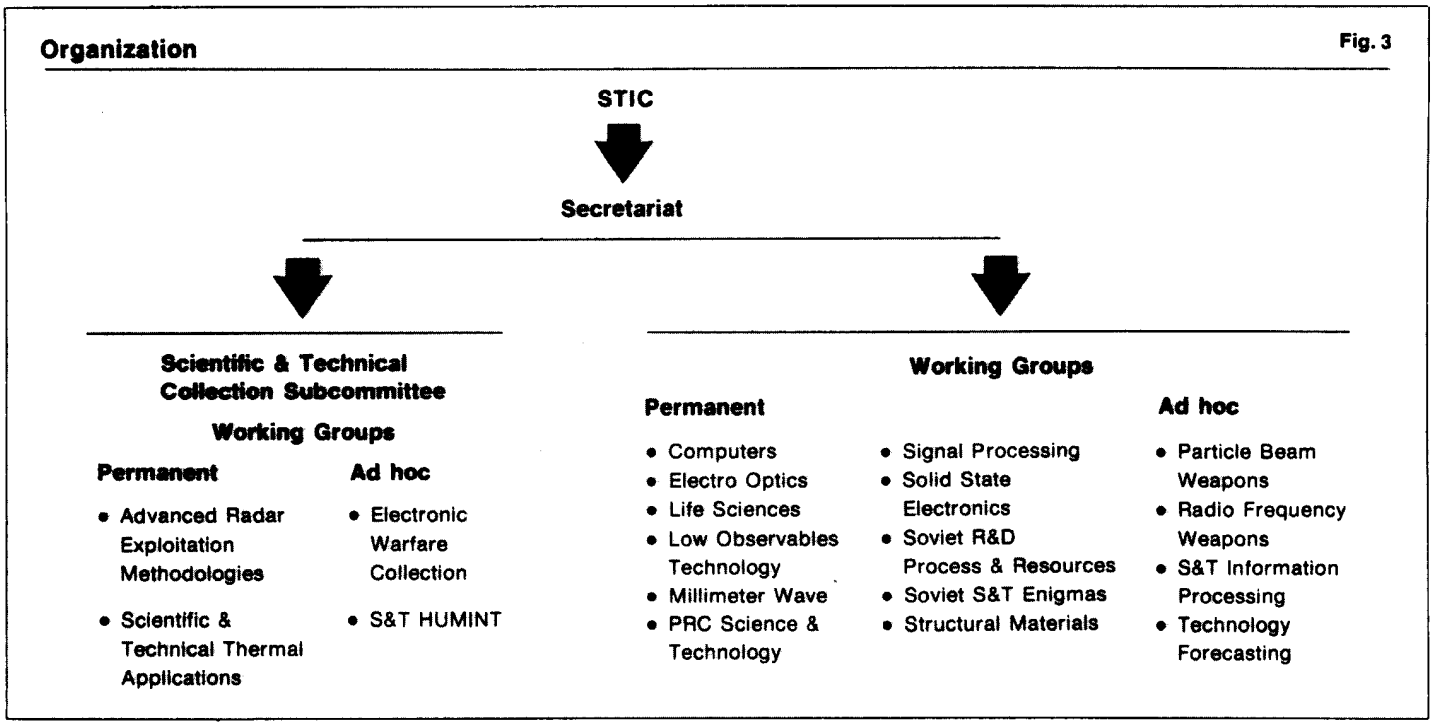
Membership Fig. 1



DCI Committee Relationship Fig. 2



Organization Fig. 3



The working groups address those S&T issues generally described by their titles to produce technical assessments on their respective technologies, collection and requirements guides, inputs to national estimates, and special studies in support of requests stemming from national level consumers or the Intelligence Community.

STIC focuses on 2 key functions:

- preventing technological surprise and
- assessing current sciences and technologies.

Technological surprise

Technological surprise refers to the concern that the USSR or any adversary may make a sudden S&T breakthrough that could strongly disadvantage the US strategically or tactically and thereby threaten our national security.

Central to preventing technological surprise is an understanding of Soviet technology, which depends on

1. access to technology information in the closed Soviet society that has adopted seemingly leak-proof security measures and
2. understanding the leading edge of US scientific and technical achievement. [Though this understanding will assist in evaluating the level of achievement in the Soviet Union in science and technology (S&T) areas where the

Please turn to p. 7

technology transfer

DOE MCTL team continues work on Sec. 17 (U)

(This article is FOR OFFICIAL USE ONLY.)

Because the expertise for nuclear- and other energy-related technology rests within the Department of Energy and its National Laboratories, the Department of Defense, which has primary responsibility for the Militarily Critical Technologies List (MCTL), has made DOE responsible for MCTL Sec. 17, the the nuclear energy section.

DOE's MCTL team is composed of a DOE program monitor (in the Office of International Security Affairs), a technical coordinator from Los Alamos National Laboratory, and technical resource people from Los Alamos, Lawrence Livermore National Laboratory (LLNL), Oak Ridge National Laboratory (ORNL), Pacific Northwest Laboratory (PNL), Sandia National Laboratories—Albuquerque (SNLA), and Savannah River Laboratory (SRL). In addition, support for specific technical areas is sought from other DOE facilities as needed.

The DOE team meets 3 to 4 times a year at DOE sites or in Washington DC. Between meetings, members revise Sec. 17, write and revise Supporting Documentation for Sec. 17, and review other MCTL sections (for example, 1-3 and 6) relevant to DOE concerns.

Last year, the DOE team completely reorganized Sec. 17, ordering the subsections more logically and adding sections on magnetic flux compression generators and lithium isotope separation technologies. The team has also extensively rewritten some sections of Sec. 17 to ensure that it encompasses the very latest technology.

In addition, the team reviews its own work, so that team members with primary responsibility for a particular section benefit from the knowledge of other DOE experts.

DOE added cross references to all relevant control lists such as the Department of Commerce Commodity Control List (CCL), the Department of State Munitions List, and the Nuclear Regulatory Commission (NRC) license list. DOE will continue to reference actual control documents where possible and is encouraging incorporating MCTL items into the CCL where appropriate.

At the team's meeting at LLNL in early November 1983, the group established the following tasks for the next MCTL review cycle.

1. Indicate for each critical element of each technology whether that element is recommended for control and the legal basis for its control. (In addition to the national security concerns that are addressed by DoD, one of DOE's major goals for its MCTL work is to augment government-wide efforts to prevent nuclear weapon proliferation.) Alternatively, a critical element may be listed for information purposes and because knowledge of its purchase could be a useful indicator of proliferation activities, but the element may not be recommended for control because of wide commercial use, wide foreign availability, or other reasons that make control unfeasible.
2. Refine and expand the Sec. 17 index. Because the best and clearest key words for indexing can probably be provided by the

Photo by Johnnie Martinez

Arvid Lundy, DOE MCTL technical coordinator.

Technologies covered by the MCTL

Sec. 1	Computer System and Network Technology
Sec. 2	Computer Hardware Technology
Sec. 3	Computer Software Technology
Sec. 4	Automated Industrial Process Control Technology
Sec. 5	Materials Technology
Sec. 6	Directed Energy Technology
Sec. 7	Semiconductor and Electronic Component Technology
Sec. 8	Instrumentation Technology
Sec. 9	Telecommunications Technology
Sec. 10	Communication, Navigation, Guidance, Control, and Identification Technology
Sec. 11	Microwave Technology
Sec. 12	Vehicular Technology
Sec. 13	Optical and Low Energy Laser Technology
Sec. 14	Sensor Technology
Sec. 15	Undersea Systems Technology
Sec. 16	Chemical Technology
Sec. 17	Nuclear- and Energy-Related Technology
Sec. 18	Cryptologic Technology

technology transfer

authors and reviewers of individual sections, the DOE team is adding that activity to this year's tasking.

3. Encourage, with DoD, use of the MCTL in a data base format for user convenience and to allow rapid updating. The MCTL exists on DoD's FORDTIS system to which, at present, no one in DOE has access. Ultimately, putting the MCTL on a system using artificial intelligence (expert systems) concepts is desirable. DOE has discussed putting MCTL Sec. 17 on such a system but does not have the funds to do so.
4. Recommend restructuring the nonnuclear energy subsections (12.7, 17.7, and 17.8) into a single section.
5. Try to expand use of the MCTL within DOE.

Because DOE has a strong desire to coordinate its activities with other government agencies that work on the MCTL, the team invites input from DoD and DOC at its meetings. For example, last July at a meeting in Washington DC, the team invited all interested parties to an open hearing on its latest Sec. 17 revision and incorporated suggestions from that meeting into the final draft submitted to DoD.

Last fall, John Boidock, Director of DOC's Office of Export Administration; Paul Hopler, DoD's MCTL coordinator; and [redacted] Defense Intelligence Agency, made valuable contributions to the DOE document.

If you have questions, comments, or suggestions for the DOE MCTL team, call Arvid Lundy, DOE MCTL Technical Coordinator, 505-667-6922 (FTS 843-6922) or Bob Cutter, acting DOE MCTL Program Monitor, 202-252-2155 (FTS 252-2155).

—Roz Newmyer
International Technology Division

25X1

Criteria for judgment of criticality

The following criteria are adapted from a list drawn up for Air Force Systems Command by BK Dynamics.

Mission value	Technologies that support critical missions are strong candidates for export controls.
Technology impact in mission	Technologies that are crucial for certain missions and for which no viable alternative exists are very strong candidates for export controls.
Pervasiveness	Technologies that contribute some value to a wide variety of systems or missions are strong candidates for export controls.
Leverage	Success in warfare results from exploiting an adversary's weakness or capitalizing on one's own strength. Technologies that create or exploit asymmetries in this balance will be of high value to a potential adversary and are strong candidates for export controls.
Lead/lag	Technologies in which US industry possesses a demonstrable lead over Warsaw Pact industries are strong candidates for export controls.
Soviet targeting	Of the many technologies that are strong candidates for export control, high priority should be given to those the Soviets have targeted for acquisition.
Cost/simplicity	Technologies that radically lower cost or simplify operation are of great military value and should be considered for export controls.
Maturity of technology	Emerging technologies that have potential for a high payoff must be carefully guarded until their potential is fully understood.
Foreign availability	If a technology is critical but available from noncontrolled sources, it is a weak candidate for control.
Control feasibility	Controls for a technology must be both desirable and feasible before they can be implemented.

The following criterion reflects DOE's special concern in the area of criticality (and is an addition to BK's original list).

Nonproliferation	Technologies that would allow a nation to develop a nuclear weapon program *must not be exported.*

What's an MCTL?

Export Administration Act (1979)

Beginning in 1976 with the publication of the Bucy Report, which called attention to the national security problem posed by the export of some critical and dual use technologies, DoD has been compiling a critical technologies list.

In 1979, a formal mechanism for that list was mandated by the Export Administration Act (EAA), which gave DoD lead responsibility for assembling a Militarily Critical Technologies List (MCTL) and Commerce responsibility for implementation and enforcement.

The EAA was up for renewal in 1983, but the Senate could not agree on a new version, so the President imposed an Executive Order that is expected to remain in effect until final passage of the new Bill. The new EAA, when enacted, almost certainly will continue to mandate an MCTL. (The Newsletter will describe provisions of the new Act as soon as possible).

The MCTL was mandated by the EAA to emphasize for each critical technology, the "arrays of design and manufacturing know-how; keystone manufacturing, inspection, and test equipment; and goods accompanied by sophisticated operation, application, or maintenance know-how which are not possessed by countries to which exports are controlled...and which, if exported, would permit a significant advance in a military system" of any such country.

The EAA further states that the MCTL should be "sufficiently specific to guide the determination of any official exercising export licensing responsibilites under this Act . . . ." Although efforts are continually being made to make it more specific, the existing MCTL does not meet this criterion; furthermore, those who have been working closely with the MCTL have found this directive in the Act to be extremely difficult, if not impossible, to implement.

As DoD has developed the MCTL, the principal focus has been on controlling technology transfer to the Soviet Bloc, but DOE has also emphasized nuclear nonproliferation concerns in its input to the MCTL.

Style and purpose

Calling the MCTL a "list" is somewhat misleading because it consists of encyclopedia-like prose sections that describe technologies as well as concise statements of the critical elements needed to implement each technology.

MCTL contributors strive to write clear, simple, readable, and accurate descriptions of each technology and subdivision of that technology and to characterize succinctly the rationale for that technology being considered militarily critical. These description and rationale sections can be useful to policy makers who need to familiarize themselves with technologies outside their background areas.

Though the MCTL is not in itself a control document, it is a useful reference for developing control lists. For example, the MCTL is being used to establish a US position for international export control regulations by the Coordinating Committee (COCOM), which consists of NATO members plus Japan less Iceland and Spain, and has been used in developing a list of gas-centrifuge-related components that have been incorporated into the internationally recognized Zangger trigger list.

In addition to the main text, Supporting Documentation is being developed to provide further technical notes and to describe foreign capabilities for each technology.

With its Supporting Documentation, the MCTL is becoming recognized as a useful technology reference for any form of technology transfer control, such as trade shows, technical data transfer, and foreign visits and exchanges. For security review purposes, the MCTL can serve as a flag to identify material that may require wider review as well as an indicator for intelligence targeting.

The MCTL has been revised, refined, reorganized, and reedited annually since 1979. DoD has a contract with the Institute for Defense Analysis (IDA) for coordinating work on the MCTL and for producing the finished document after each revision. The mechanism used by IDA for MCTL review and revision is the Technical Working Group (TWG), which comprises representatives from executive departments and industry.

Because technology transfer control can have a strong impact on industry, IDA and DoD got industry input in 1982 by submitting the MCTL for review by the Multi-Association Policy Advisory Group (MAPAG), composed entirely of industry representation.

DOE's MCTL Team

DOE HQ	Los Alamos	LLNL	ORNL	PNL	SNLA	SRL
Bob Cutter	Arvid Lundy	John Illige	S. A. Levin	Jim Davidson	Roger Hagengruber	Don Orth
	Don Janney	John Sherohman	Jerry Malling	Ron Melton	Jim Corey	
	Bert Helmick	George Anzelon	Shell Jacobs	Marvin Erikson	Bob Hughen	
	Jasper Jackson					
	Tom McDonald					
	Roz Newmyer					
	Jim Ramsbotham, consultant					

technology transfer

25X1

STIC, cont.

25X1

25X1

Soviets have parity with the US.

Problems associated with understanding Soviet technology and the resultant difficulty in arriving at accurate and current comparative US-Soviet technology assessments have forced the Intelligence-R&D-Industrial communities into polarized spheres of technology interests, each with varying degrees of expertise. As a result, technological surprise for a given technology becomes difficult to define, and, if construed as supporting a parochial interest, difficult to defend to policy and decision makers. Unfortunately, this difficulty tends to weaken efforts to prevent such surprise.

To assess current S&T, STIC enlists the aid of qualified scientists and engineers in the S&T centers, the various national level intelligence agencies and government departments, and, most importantly, national laboratories.

Lawrence Livermore, Los Alamos, Pacific Northwest, and Sandia National Laboratories, through DOE, provide an understanding of the leading edge in many S&T areas of interest through their effective participation in STIC working groups.

25X1

By producing timely and accurate assessments, collection guides, and other finished intelligence products, STIC is ensuring that US policy and decision makers have for their consideration those intelligence tools necessary to the prevention of technological surprise and, hence, the promotion of national security.

distribution

Department of Energy, Washington, DC 1-37
The Secretary, Donald Paul Hodel, S-1
Deputy Secretary, Danny J. Boggs, S-2
The Under Secretary, Pat Collins, S-3
Assistant Secretary for Defense Programs, DP-1
Director of Energy Research, Alvin W. Trivelpiece, ER-1
Assistant Secretary for International Affairs and Energy Emergencies, Helmut A. Merklein, IE-1
Assistant Secretary for Nuclear Energy, Shelby T. Brewer, NE-1
Assistant Secretary for Fossil Energy, William A. Vaughn, FE-1
Assistant Secretary for Policy, Safety, and Environment, Jan W. Mares, PE-1
A. Morgan, CP-20
M. E. Whitley, DP-3
F. C. Gilbert, DP-10
W. W. Hoover, DP-20
R. L. Schriever, DP-23
J. W. Culpepper, DP-30
R. T. Duff, DP-32
J. L. Torres, DP-33
G. F. Dickerson, DP-33.1
J. F. Raymond, DP-332.1
C. Thorne, DP-332
R. L. Bingham, DP-332.2
Richard Bowen, DP-332.2
J. R. Cutter, DP-332.2
W. Henoch DP-332.2
Harvey B. Jones, DP-333
R. E. Caudle, DP-34
M. J. Dowd, DP-35
Charles Boykin, DP-40
L. C. Ritchie, DP-353
J. S. Kane, ER-2
R. H. Kropschot, ER-10
J. E. Leiss, ER-20
J. F. Clarke, ER-51
H. Jaffe, IA-22
E. E. Anschutz, NE-6
F. E. Coffman, NE-30
N. Haberman, NE-620

Department of Energy Field Offices
Albuquerque Operations Office 38-40
Doug Denham
Mary G. Carlyon
Nevada Operations Office 41
Oak Ridge Operations Office 42
Richland Operations Office 43
Savannah River Operations Office 44
Chicago Operations Office 45
San Francisco Operations Office 46
Idaho Operations Office 47

National Laboratories
Los Alamos National Laboratory 48-121
Director, Donald M. Kerr
Robert N. Thorn
Karl Braithwaite
Allen L. Jennings
John H. Birely
Michael E. Berger
Kaye D. Lathrop
C. Paul Robinson
Robert W. Selden
Warren F. Miller, Jr.
Christopher Adams, Jr.
Judith M. Liersch
James M. Williams
Steven A. Maaranen
Darleane C. Hoffman
Keith Taggert
O'Dean P. Judd
Lara H. Baker, Jr.
Jay Norman
John F. Barnes
David Watkins
Donald Wolkerstorfer
John McDonald
Report Library, Dan Baca
Jill Warren (50 copies)
Lawrence Livermore National Laboratory 122-137
Director, Roger Batzel
John D. Anderson
John L. Emmett
T. Kenneth Fowler
Michael M. May
A. Carl Haussmann
Robert Andrews
G. Staehle
P. Coyle
D. Emmert
J. Hadley
D. Eddy
J. Illige
I. Morrison
Ken Street
John Ranelletti
Sandia National Laboratories, Albuquerque, NM 138-145
President, G. C. Dacey
Gerold Yonas
B. L. Gregory
J. C. King
Roger Hagengruber (2 copies)
James Corey
Robert P. Stromberg
Sandia National Laboratories Livermore, CA 146
Richard Claassen
Oak Ridge National Laboratory 147-148
Director, Herman Postma
M. W. Rosenthal
Oak Ridge Gaseous Diffusion Plant 149-150
J. T. Bradbury
S. A. Levin
Oak Ridge Y-12 Plant 151-152
Ronald Miskell
Gordon G. Fee
Brookhaven National Laboratory 153
Director, N. P. Samios
Savannah River Laboratory 154
Director
Pacific Northwest Laboratory 155-156
James M. Davidson
R. B. Melton

Department of Energy Area Offices
Amarillo Area Office 157
Kansas City Area Office 158
Pinellas Area Office 159
Dayton Area Office 160
Los Alamos Area Office 161
Rocky Flats Area Office 162

Department of Commerce, 163-176
Office of Intelligence Liaison, William Brown
Keith Fennell
Assistant Secretary for Trade Administration
Assistant Secretary for Productivity, Technology, and Innovation, Bruce Merrifield
Director, Office of Export Administration, John Boidock
Anatoli Welihozkiy
H. Mitman
Dan Hoydish
Albert P. Solga, OEA ITA
Deputy Assistant Secretary for Export Enforcement, Theodore Wu
National Bureau of Standards, Director
Edward L. Brady
Howard Sorrows
Carl Shepard, OPTI

Department of State 177-200
The Under Secretary, William Schneider, Jr.
Director, PM/STN (2 copies)
David Wilson, EBI
Robert Upchurch, INR/PMA
Teresa C. Jones, INR/PMA
Dean Howells, INR/PMA
William Robinson, Director, PM/MC-SA-6
Samuel Tomsen,OESISCT
Michael Marks, T
Edward Herwitz, EUR/SOV
Michael G. Anderson, EUR/EE
Richard Boucher
EA/C
Ron Kirkpatrick, EB/EWT
Victor Comras, EUR/RPE
John Danylyk, INR/EC
Martin Prochnik, OES/NTC
James Devine, OESN
Carlton Stoiber, OES/NEC
Allan Sessoms, OES/NTS
Fred McGoldrick, OES/NEP
Richard Kennedy, INR/SEE
Louis Dunn, ACDA
Dean Rust, ACDA

Department of Treasury 201-209
Assistant Secretary for Enforcement and Operations
Commissioner of Customs
Assistant Commissioner for Enforcement
Director of Investigations
Director, Strategic Investigation Division
Chief, Field Operations Branch
Chief, Technical Branch
Chief, Munitions Control Branch
Director, Intelligence Technology Division
Los Angeles Customs 210-211
Allan D. Walls
Bob Olson

Department of Justice 212-215
Joseph J. Tafe (ISS)
John L. Martin (ISS)
Gerald Schroeder (OIPR)
Rick Cinquegrana (OIPR)
Roger Diehl (FBI) 216-217
Lyle Theisen (FBI)
Gerald B. Brown (FBI) 218

Department of Defense 219-228
(Office of Secretary of Defense)
Deputy Under Secretary IPT, Talbot S. Lindstrom
Deputy Under Secretary R & AT, Edith Martin
Leo Young
Paris Genalis
Oles Lomacky
Frank Kapper
Paul Hopler
Capt. Albert J. Perella
Capt. James B. Sell
Gen. Donald L. Lamberson, Deputy DCS R&D
Paul Berenson, OSD(AE) 229
Stephen D. Bryen, ISP 230-233
John R. Konfala
Mark R. Hake
Col. Robert A. Witter
Defense Intelligence Agency 234-242

[redacted]

Department of the Air Force
Director, FTD 243-244
Jerry Roberts, FTD
James Bartley, FTD/TQTA 245
E. Chase, FTD/TQTA 246-247
Maj. Price, FTD/SDBG 248
Col. George W. Williams, SHAPE 249
Major Tom Dyble, AF/INET 250-251
Capt. Ray Vitkus, AF/INET ~~252~~ - ~~250~~-256
Commander, Air Force Weapons Laboratory
Capt. Michael Soukup, AFWL-IN
AFWL-CA
A. Basso, AFWAL/GLXPI
1Lt Efren V. Fornoles, YH
~~John McMann, AFSC~~
John McMann, AFSC 257
A. Chruscicki, RADC/COEE 258
Al Young, AFATL/DLXP 259
HQ USAF/CVAIP 260-262
Barry Tell
Maj. James Engel HQ USAF/XOXIP
Capt. R. Lyons, ESD/XRVT 263
M. L. Laster, AEDC/DOT 264
Sherman Chan, HQ AFLC/AQ 265
Maj. Kevin Yelmgren, BMO/SYMS 266
Noreen Dimond, AFGL/XOP 267
D. Pierce, RADC/DOT 268
Matt Kerper, AFOSR/XOT 269
John Jones, HQ AFCMD/SP 270
H. J. Stachowski, ASD/XR 271
Lt. Col. James Turner, AMD/XRX 272
Robert L. Wisewell, AFRPL/XRX 273
Capt. Kevin E. Peterson, HQ AFOSI/IVOAB 274
Maj. Dennis Zack, HQ AFSC/INA 275
Department of the Army
Commander, Foreign Science Technology Center (FSTC), Charlottesville, VA 276-279
Bertram Smith
R. G. Priddy, DAMI
Lawrence Mounter
Commander, US Army Missile Command, DRSMI-XO 280
Aberdeen Proving Ground, DRSTE-CM-F 281
John Otto, ITAC 282
Commander, Security Support Detachment 283
Edward Brown, Harry Diamond Laboratories 284
William J. Hughes 285
Department of the Navy
Max Koontz, NISC 286-290
E. A. McCulloch, NISC/CB
Clarence E. Field, NISC
Howard Greyber NISC/41
LCDR Michael Bartol, NISC-41
Bobby Ellison, NAV 091 291
Betty Cintron, OpNav 623 (4 copies) 292-296
Col. Darwin Lundberg
John Dunlavey, MAT-08I, (3 copies) 297-299
George Lindsteadt, Naval Weapons Center 300
Richard Mark, Pacific Missile Test Center 301

Central Intelligence Agency, 302-346
Deputy Director, John McMahon

[redacted]

National Security Agency, T532 347-372

National Security Council 373-376
Director
Ken deGreffenreid
Art Manfredi
Gus Weiss

Office of Science Technology Policy 377-379
Director, George Keyworth, III
Andrew Pettifor
Michael Havey

President's Foreign Intelligence Advisory Board 380
C. Norman Wood

National Aeronautics and Space Administration
Washington, DC
Director 381
Director, Jet Propulsion Laboratory 382-383
Victoria Melikan
Langley Research Center 384
M. Leroy Spearman
Lyndon B. Johnson Space Center 385
Joseph Loftus
Director, Greenbelt Laboratory 386
John F. Kennedy Space Center 387
Kenneth E. Lopez
Lewis Research Center 388-389
Andrew F. Corcoran
Harold D. Wharton
National Space Technology Laboratories 390
Henry Speir

Nuclear Regulatory Commission 391-392
Marvin Peterson
Raymond Brady