

S. HRG. 106-262

**FINAL REVIEW OF THE COMPREHENSIVE NUCLEAR
TEST BAN TREATY (Treaty Doc. 105-28)**

HEARING

BEFORE THE

**COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE**

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

—————
OCTOBER 7, 1999
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**FINAL REVIEW OF THE COMPREHENSIVE NU-
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THURSDAY, OCTOBER 7, 1999

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

MORNING SESSION

The committee met, pursuant to notice, at 10:35 a.m. in room SD-419, Dirksen Senate Office Building, Hon. Jesse Helms (chairman of the committee) presiding.

Present: Senators Helms, Hagel, Smith, Thomas, Grams, Biden, Kerry, and Boxer.

The CHAIRMAN. The committee will come to order. This is the final hearing of the Foreign Relations Committee on the Comprehensive Test Ban Treaty. We extend our sincere welcome to our first panel, Hon. Caspar Weinberger, former Secretary of Defense for President Reagan, Hon. Jeane Kirkpatrick, former U.S. Ambassador to the United Nations, and Hon. Stephen Ledogar, former chief negotiator of the CTBT.

I have already welcomed Mr. Ledogar in person, and I welcomed Cap Weinberger, and Jeane Kirkpatrick is on her way. I am confident in any event following the testimony by these distinguished witnesses this morning, the committee will convene a second session this afternoon in which we will hear from the distinguished chairman of the Armed Services Committee, Senator Warner.

We agreed to go back and forth to try to make our case, and also the ranking Democrat on the Armed Services Committee, Senator Levin, as well as the chairman of the Intelligence Committee, Senator Shelby, and the vice chairman of that committee, Bob Kerrey, Senator Kerrey of Nebraska, and we will hear from the distinguished Secretary of State, Madeleine Albright, and finally from the third panel of arms control experts, former acting director Ronald Lehman, chairman of the Nevada Alliance for Defense, Energy and Business, Troy Wade, and from Dr. Richard Garwin of the Council on Foreign Relations.

So I suggest by the end of the day it will be difficult for anyone to credibly contend that the CTBT has not been thoroughly discussed and debated.

Now then, I have a feeling most people know where I stand on the treaty, and so I am not going to engage in extended oratory this morning except to say this. I sense a clear consensus is emerg-

ing in the foreign policy community against Senate ratification of the CTBT. Here is why.

Four former Directors of Central Intelligence have weighed in against the CTBT, including two of President Clinton's CIA Directors, Jim Woolsey and John Derish. Two former chairmen of the Joint Chiefs, Admiral Tom Moore and Admiral John Vessey are likewise strongly opposed, and yesterday the Senate received a letter signed by six—count them, six—distinguished former Secretaries of Defense, Cap Weinberger, who is with us today, thank the Lord, Frank Carlucci, Dick Cheney, Donald Rumsfeld, Jim Schlesinger, and Mel Laird.

And it occurs to me that such unanimity among the former Secretaries of Defense in opposition to an arms control treaty is almost without precedent, and I might say that the present distinguished Secretary of Defense, whom I admire greatly and enjoyed greatly, served in the Senate with him, when he was a Senator he strongly opposed this treaty.

In any case, perhaps we should be reminded that it's not the Republicans who asked for this vote. It was forced upon us by the President and all 45 Senators on the other side of the aisle. They wrote me a letter. I have never had a letter from so many distinguished Americans in my life, 45 Senators on the other side of the aisle, but the fact remains, if this treaty is brought up to a vote next Tuesday, I believe it will be defeated.

Now, there is only one way that the President can call off that vote next Tuesday. He must formally request in writing that (a) the treaty be withdrawn, and (b) that the CTBT not be considered for the duration of his Presidency.

Now, if the President does that, then the CTBT will be effectively dead, just as SALT II was effectively dead after President Carter made a similar written request of the Senate, and if Mr. Clinton does not submit a written request, we will proceed with the vote, and I am confident that the CTBT will be defeated, so the President has the choice to make.

Perhaps your testimony today, Secretary Weinberger, and Ambassador Kirkpatrick, will serve to convince the President that the time has come to make such a request and a commitment. If not, I know your testimony will certainly be informative to many Senators as we proceed with the vote next Tuesday.

Senator Biden.

Senator BIDEN. Mr. Chairman, let me begin by saying I love you, but I find your characterizations interesting. This is the final hearing that is true. I would argue it is the first hearing as well as the final hearing, but that is not worth getting into right now.

And as it relates to a clear consensus of the foreign policy community, I would ask, rather than take the time now, to enter in the record a list of prominent individuals including the present and five former chairmen of the Joint Chiefs of Staff, as well as 32 Nobel laureates, et cetera, and so if we can duel on who supports what, I am confident that there are more prominent Americans, particularly scientists, who support this than oppose it, but at any rate, I would ask unanimous consent that they be put in the record.

The CHAIRMAN. Of course. Without objection.

[The information referred to follows:]

PROMINENT INDIVIDUALS AND NATIONAL GROUPS IN SUPPORT OF THE CTBT
(September 20, 1999)

CURRENT CHAIRMAN AND FORMER CHAIRMEN OF THE JOINT CHIEFS OF STAFF

General Hugh Shelton, Chairman of the Joint Chiefs of Staff
General John Shalikashvili, former Chairman of the Joint Chiefs of Staff
General Colin Powell, former Chairman of the Joint Chiefs of Staff
General David Jones, former Chairman of the Joint Chiefs of Staff
Admiral William Crowe, former Chairman of the Joint Chiefs of Staff

FORMER MEMBERS OF CONGRESS

Senator John C. Danforth
Senator J. James Exon
Senator Nancy Kassebaum Baker
Senator Mark O. Hatfield
Senator John Glenn
Representative Bill Green
Representative Thomas J. Downey
Representative Michael J. Kopetski
Representative Anthony C. Bellenson
Representative Lee H. Hamilton

DIRECTORS OF THE THREE NATIONAL LABORATORIES

Dr. John Browne, Director of Los Alamos National Laboratory
Dr. Paul Robinson, Director of Sandia National Laboratory
Dr. Bruce Tarter, Director of Lawrence Livermore National Laboratory

OTHER PROMINENT NATIONAL SECURITY OFFICIALS

Ambassador Paul H. Nitze—arms control negotiator, Reagan Administration
Admiral Stansfield Turner—former Director of the Central Intelligence Agency
Charles Curtis—former Deputy Secretary of Energy

OTHER PROMINENT MILITARY OFFICERS

General Eugene Habiger—former Commander-in-Chief of Strategic Command
General John R. Galvin—Supreme Allied Commander, Europe
Admiral Noel Gayler—former Commander, Pacific
General Charles A. Horner—Commander, Coalition Air Forces, Desert Storm, former Commander, U.S. Space Command
General Andrew O'Meara—former Commander U.S. Army Europe
General Bernard W. Rogers—former Chief of Staff, U.S. Army; former NATO Supreme Allied Commander
General William Y. Smith—former Deputy Commander, U.S. Command, Europe
Lt. General Julius Becton
Lt. General John H. Cushman—former Commander, I Corps (ROK/US) Group (Korea)
Lt. General Robert E. Pursley
Vice Admiral William L. Read—former Commander, U.S. Navy Surface Force, Atlantic Command
Vice Admiral John J. Shanahan—former Director, Center for Defense Information
Lt. General George M. Seignious, II—former Director Arms Control and Disarmament Agency
Vice Admiral James B. Wilson—former Polaris Submarine Captain
Maj. General William F. Burns—JCS Representative, INF Negotiations, Special Envoy to Russia for Nuclear Dismantlement
Rear Admiral Eugene J. Carroll, Jr.—Deputy Director, Center for Defense Information
Rear Admiral Robert G. James

OTHER SCIENTIFIC EXPERTS

Dr. Hans Bethe—Nobel Laureate; Emeritus Professor of Physics, Cornell University; Head of the Manhattan Project's theoretical division
Dr. Freeman Dyson—Emeritus Professor of Physics, Institute for Advanced Study, Princeton University

- Dr. Richard Garwin—Senior Fellow for Science and Technology, Council on Foreign Relations; consultant to Sandia National Laboratory, former consultant to Los Alamos National Laboratory
- Dr. Wolfgang K. H. Panofsky—Director Emeritus, Stanford Linear Accelerator Center, Stanford University
- Dr. Jeremiah D. Sullivan—Professor of Physics, University of Illinois at Urbana-Champaign
- Dr. Herbert York—Emeritus Professor of Physics, University of California, San Diego; founding director of Lawrence Livermore National Laboratory; former Director of Defense Research and Engineering, Department of Defense
- Dr. Sidney D. Drell—Stanford Linear Accelerator Center, Stanford University

NATIONAL GROUPS

Medical and Scientific Organizations

American Association for the Advancement of Science
 American Medical Students Association/Foundation
 American Physical Society
 American Public Health Association
 American Medical Association

Public Interest Groups

20/20 Vision National Project
 Alliance for Nuclear Accountability
 Alliance for Survival
 Americans for Democratic Action
 Arms Control Association
 British American Security Information Council
 Business Executives for National Security
 Campaign for America's Future
 Campaign for U.N. Reform
 Center for Defense Information
 Center for War/Peace Studies (New York, NY)
 Council for a Livable World
 Council for a Livable World Education Fund
 Council on Economic Priorities
 Defenders of Wildlife
 Demilitarization for Democracy
 Economists Allied for Arms Reduction (ECAAR)
 Environmental Defense Fund
 Environmental Working Group
 Federation of American Scientists
 Fourth Freedom Forum
 Friends of the Earth
 Fund for New Priorities in America
 Fund for Peace
 Global Greens, USA
 Global Resource Action Center for the Environment
 Greenpeace, USA
 The Henry L. Stimson Center
 Institute for Defense and Disarmament Studies (Saugus, MA)
 Institute for Science and International Security
 International Association of Educators for World Peace (Huntsville, AL)
 International Physicians for the Prevention of Nuclear War
 International Center
 Izaak Walton League of America
 Lawyers Alliance for World Security
 League of Women Voters of the United States
 Manhattan Project II
 Maryknoll Justice and Peace Office
 National Environmental Coalition of Native Americans (NECONA)
 National Environmental Trust
 National Commission for Economic Conversion and Disarmament
 Natural Resources Defense Council
 Nuclear Age Peace Foundation
 Nuclear Control Institute
 Nuclear Information & Resource Service
 OMB Watch

Parliamentarians for Global Action
 Peace Action
 Peace Action Education Fund
 Peace Links
 PeacePAC
 Physicians for Social Responsibility
 Plutonium Challenge
 Population Action Institute
 Population Action International
 Psychologists for Social Responsibility
 Public Citizen
 Public Education Center
 Saferworld
 Sierra Club
 Union of Concerned Scientists
 United States Servas, Inc.
 Veterans for Peace
 Vietnam Veterans of America Foundation
 Volunteers for Peace, Inc.
 War and Peace Foundation
 War Resisters League
 Women Strike for Peace
 Women's Action for New Directions
 Women's Legislators' Lobby of WAND
 Women's International League for Peace and Freedom
 World Federalist Association
 Zero Population Growth

RELIGIOUS GROUPS

African Methodist Episcopal Church
 American Baptist Churches, USA
 American Baptist Churches, USA, National Ministries
 American Friends Service Committee
 American Jewish Congress
 American Muslim Council
 Associate General Secretary for Public Policy, National Council of Churches
 Catholic Conference of Major Superiors of Men's Institutes
 Church Women United
 Coalition for Peace and Justice
 Columbian Fathers' Justice and Peace Office
 Commission for Women, Evangelical Lutheran Church in America
 Covenant of Unitarian Universalist Pagans
 Christian Church (Disciples of Christ) in the United States and Canada
 Christian Methodist Episcopal Church
 Church of the Brethren, General Board
 Division for Church in Society, Evangelical Lutheran Church in America
 Division for Congregational Ministries, Evangelical Lutheran Church in America
 Eastern Archdiocese, Syrian Orthodox Church of Antioch
 The Episcopal Church
 Episcopal Peace Fellowship, National Executive Council
 Evangelicals for Social Action
 Evangelical Lutheran Church in America
 Fellowship of Reconciliation
 Friends Committee on National Legislation
 Friends United Meeting
 General Board Members, Church of the Brethren
 General Board of Church and Society, United Methodist Church
 General Conference, Mennonite Church
 General Conference of the Seventh Day Adventist Church
 Jewish Peace Fellowship
 Lutheran Office for Governmental Affairs, Evangelical Lutheran Church in America
 Mennonite Central Committee
 Mennonite Central Committee, U.S.
 Mennonite Church
 Methodists United for Peace with Justice
 Missionaries of Africa
 Mission Investment Fund of the ELCA, Evangelical Lutheran Church in America

Moravian Church, Northern Province
 National Council of Churches
 National Council of Churches of Christ in the USA
 National Council of Catholic Women
 National Missionary Baptist Convention of America
 NETWORK: A National Catholic Social Justice Lobby
 New Call to Peacemaking
 Office for Church in Society, United Church of Christ
 Orthodox Church in America
 Pax Christi
 Presbyterian Church (U.S.A.)
 Presbyterian Peace Fellowship
 Progressive National Baptist Convention, Inc.
 Religious Action Center of Reform Judaism
 The Shalom Center
 Sojourners
 Union of American Hebrew Congregations
 United Church of Christ
 United Methodist Church
 United Methodist Council of Bishops
 Unitarian Universalist Association
 Washington Office, Mennonite Central Committee
 Women of the ELCA, Evangelical Lutheran Church in America

Senator BIDEN. Mr. Chairman, I welcome the opportunity to discuss the test ban treaty. This afternoon, when the Secretary of State appears before us, I have a slightly longer statement as to why I support the treaty and believe the Senate should give its ratification to the treaty.

This morning I would like to briefly set the stage for the debate that is about to commence. Thirty-six years ago last month, less than a year after the United States and the Soviet Union came to the brink of nuclear war, the U.S. Senate gave its advice and consent to the Limited Test Ban Treaty, a pact banning nuclear tests in the atmosphere. Only a handful of our Senate colleagues were here at that time, long-serving legends like Strom Thurmond, and Robert C. Byrd, and Dan Inouye, and possibly one or two others.

But although the geopolitical circumstances have changed, as have the names and the faces of the United States Senators, in some ways the debate today is very familiar. Then, as now, there were questions about our ability to maintain a strong nuclear deterrent under the treaty. Then, as now, there were questions about whether a country whose capital is Moscow would cheat.

Then, as now, there were concerns about the ability of the United States to effectively verify the treaty. Then, as now, there were concerns about American leadership if we failed to ratify the treaty. Then, as now, the Joint Chiefs and the administration of the day devised safeguards to assure that the United States would adhere to the treaty and maintain a strong nuclear deterrent force.

The story since 1963 is one in which those whom I would call the realistic optimists were in my view proved right, and those who I call the visceral pessimists did not see their fears realized.

Our deterrent posture did not suffer, even though we gave up a test that surely gave us more confidence in our weapons systems than we could gain through underground tests alone. We gained worldwide respect for reining in the nuclear arms race which 5 years later translated into the U.S. diplomatic success in negotiating a Nuclear Nonproliferation Treaty and the treaty banning nuclear weapons in Latin America, treaties that have succeeded in

constraining our nuclear proliferation, and we gave our own people hope that the cold war would not lead to the white heat of nuclear holocaust.

Eight years after the collapse of the Soviet Union, there is great disagreement in this country about our foreign policy objectives and our role in the world, but surely there should be no disagreement that we should still pursue a strategy of containment, this time directed not against an ideological foe, but against the spread of dangerous weapons and technology.

The Comprehensive Test Ban Treaty, which prohibits any nuclear test explosion, is a key component to that strategy. Thirty-six years ago, Senate Republican Leader Everett Dirksen, for whom this building is named, reached across the aisle and supported a treaty negotiated by President Kennedy.

In his speech on the Senate floor, Dirksen quoted a famous Republican from his home State of Illinois, and I quote, it is the true—quoting Abraham Lincoln—“The true role in determining to embrace or reject anything is not whether it have any evil in it, but whether it have more evil than good. There are few things wholly evil or wholly good. Almost everything, especially of Government policy, is an inseparable compound of the two, so that our best judgment of the preponderance between them is continuously demanded.”

Lincoln’s words commend themselves to us now. This treaty is a good treaty. It is not a perfect treaty. No treaty produced by over 100 nations will ever be, but it has a lot of good in it. The benefits which I will discuss this afternoon and will debate today I believe clearly outweigh the risks, and I hope my colleagues will study it closely and come to the same conclusion.

I thank you, Mr. Chairman, and look forward to hearing from our witnesses.

The CHAIRMAN. Thank you, Senator Biden. On the theory that ladies go first, Ms. Kirkpatrick, if you will present your case. Thank you.

STATEMENT OF HON. JEANE J. KIRKPATRICK, SENIOR FELLOW, AMERICAN ENTERPRISE INSTITUTE AND FORMER U.S. PERMANENT REPRESENTATIVE TO THE UNITED NATIONS

Ambassador KIRKPATRICK. Thank you very much, Mr. Chairman, for inviting me to testify before this distinguished committee on this vitally important subject.

I accepted your invitation, Mr. Chairman, because I believe it is essential that this Nation’s defenses be adequate to cope with the growing dangers we face from hostile powers possessing weapons of mass destruction and effective means of delivery.

Mr. Chairman, I have had a good deal of intensive exposure to this subject first, a consequence of having served on President Reagan’s Blue Ribbon Presidential Task Force on Nuclear Products in 1985, on the President’s Foreign Intelligence Advisory Board from 1985 to 1990, on the Defense Policy Review Board from 1985 to 1992, and then, after having been appointed by Secretary of Defense Dick Cheney in 1991 and 1992, I chaired the Failsafe and Risk Reduction Committee, generally referred to by its acronym as

the FARR committee, which was charged with reviewing the United States nuclear command and control system.

This experience made a strong impression on me concerning the dangers of proliferating nuclear and missile technology. As everyone who is interested in these matters knows, a number of countries are capable of producing and delivering nuclear weapons and other weapons of mass destruction. The number has increased, and is increasing as we speak, and it includes several of the world's most aggressive, repressive, destructive, and dangerous countries, North Korea, Iran, Iraq, as well as a Russia less stable than we would prefer, and a China less benign.

We know, moreover, that other regimes with little regard for the rule of law or human rights work to acquire weapons of mass destruction, and that against these weapons the United States can rely only on its nuclear deterrent. We have no other defenses against weapons of mass destruction.

The current dangers have been documented and described in the past year with great clarity by the Rumsfeld and the Cox Commissions. The Rumsfeld Commission, which had unprecedented—and I quote now—“unprecedented access to the most sensitive and highly classified information,” concluded that, “The threat to the United States posed by these emerging capabilities is broader, more mature, and evolving more rapidly than has been reported and that several countries, including Iraq, will be able to inflict major damage on the United States within about 5 years,” and that was written in 1998, that is, they started counting in 1998.

The Cox Commission describes the shocking success of China in buying and stealing the most advanced U.S. thermonuclear missile and space technology, which was quickly made available to other governments, enabling China to “pose a direct threat to the United States, our friends and allies, or our forces.”

We know from the work of the Rumsfeld and the Cox Commissions that at least two countries which already have nuclear weapons, North Korea and China, have recently engaged in intensive successful efforts to upgrade the weapons and the missiles which carry them.

It is disturbing to me, Mr. Chairman, that President Clinton has not been mobilized to make the defense of the American people against these proliferating threats a top priority. Instead, confronted with these dangers, President Clinton and his administration have placed one obstacle after another in the path of the development of an effective missile defense. They have imposed disabling requirements and unnecessary delays on the development and deployment of effective national and theater missile defenses.

The President has urged that we give priority to preserving an extended, outmoded ABM Treaty interpreted to be maximally constraining on us. Now he urges on us the Comprehensive Test Ban Treaty, which would commit the U.S. Government to carrying out no nuclear tests—ever.

The United States has already lived through the longest ever moratorium on tests. Now, with the CTBT, he proposes to extend that moratorium forever. There are several reasons why it would be imprudent for the United States to make this commitment never

to conduct another explosive nuclear test. I will summarize briefly those which seem to me most compelling.

First is the fact that our Government takes its commitments seriously. If we were to sign this treaty, we would feel bound by its terms. We would not feel free to violate it, as many governments will. We would not conduct explosive tests if we signed this treaty.

Second, as everyone knows, the treaty cannot be verified. The CIA has recently publicly acknowledged that it cannot detect low-yield tests. It bothers me that we will not know when and if they are cheating, and some will surely cheat us.

Third, I learned from my service on the Blue Ribbon and FARR committees, Mr. Chairman, that the safety and reliability of our nuclear stockpiles cannot be taken for granted, but must be monitored. Testing is a vital part of ascertaining and maintaining the reliability and safety of our nuclear weapons. It is also a necessary step in modernizing our nuclear weapons.

Testing is vital to maintaining the reliability and credibility of our nuclear deterrent and our confidence in it. The authors of this treaty understand how important testing is to maintaining the viability of nuclear weapons. The preamble to the treaty, which I think everyone should read, states, and I quote, "Recognizing that the cessation of all nuclear weapon test explosions and all other nuclear explosions by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons constitutes an effective measure of nuclear disarmament and nonproliferation in all its aspects."

That is pretty clear, and a second item in the preamble asserts, and I quote, "Further recognizing that an end to all such nuclear explosions will thus constitute a meaningful step in the realization of a systematic process to achieve nuclear disarmament." That preamble makes interesting reading, and I recommend to the Senators who will vote on this treaty that they should read the treaty and they should read the expectations of its authors.

The fourth reason that I oppose the ratification of the treaty, is that our deterrent—that nuclear deterrent which will be so weakened by the ratification of the CTBT—is more important to the security of Americans today, with rogue States developing the capacity to attack our cities and our populations, than it ever has been, because Americans and their allies are more vulnerable today than we ever have been.

Mr. Chairman, the threat to Americans, its cities and populations, is here and now. It has expanded dramatically, not only because of systematic Chinese theft of America's most important military secrets, and because of the inadequate policies governing the safekeeping and transfer of technology of this administration, but also because several countries who are signatories to the Nuclear Nonproliferation Treaty [NPT] have violated their commitments under the Nuclear Nonproliferation Treaty.

They signed the nonproliferation treaty, served in IAEA governing boards, and violated their commitments. They made a commitment in signing the Nuclear Nonproliferation Treaty, and I quote now, they have already made a commitment quote, "not to transfer or in any way assist, encourage, or induce any nonnuclear

weapons State to acquire nuclear weapons,” close quote, and also, “not to receive the transfer of nuclear weapons or other explosive devices, not to manufacture or otherwise acquire, not to receive assistance in the manufacture of nuclear weapons or other nuclear explosive devices.”

The system resembles an honor system at a university. You promise neither to cheat nor to assist anyone else in cheating, and to report anyone who does that comes to your attention. China is not a signatory of the Nuclear Nonproliferation Treaty. Russia is, so are Iran, Iraq, and Libya. These are all States that have been seeking and alas, acquiring, nuclear capacities. India, North Korea and Pakistan are not signatories, but Iran, Iraq, and Libya are. China is not, Russia is. All are engaged in proliferation—either by offering nuclear technology and weapons, or by seeking it and accepting it.

Obviously, whether or not a government has signed the Nuclear Nonproliferation Treaty has little impact on their behavior with regard to proliferation. Some who signed it, violate it. Some who have not signed it are also engaged in the same activities.

That is, I think, the critical point concerning what I think of as the arms control approach to national security. You just cannot count on it. We cannot rely on this treaty to prevent countries that are actually or potentially hostile to us from acquiring and testing and sharing nuclear arsenals and ballistic missiles. The evidence is clear. I think it is clear, anyway.

Why, then, does President Clinton, whose decisions have diminished, delayed, and denied us development and deployment of effective missile defenses, now urge on us a treaty which would endanger the reliability of the nuclear deterrent, which is our only defense, against a nuclear attack.

Mr. Chairman, the President and some of the supporters of the treaties argue that the action of the Senate in ratifying or rejecting this treaty will determine whether the world ends nuclear tests and proliferation forever, and I have heard several Senators say that in the last 48 hours, and you probably have, too. But that is not true, Mr. Chairman.

China, North Korea, Iran, Iraq, just to name those countries at random almost, do not follow our lead. They are not waiting urgently to see what we are going to do so that they can do likewise. I wish they were. The world would be safer if they did.

Finally, Mr. Chairman, I would like to call the committee's attention to the governance of the organization which will administer this treaty. This I might say is of particular concern to me. I note that all State parties are members, will be members of the organization, not simply nuclear powers, but all, basically all those countries which signed the treaty, which is about 194—I think that is the right figure. That is approximately right—will be members. No State party can be excluded—under the organizing rules.

This organization will operate as the United Nations General Assembly does on the basis of one country, one vote, with an executive council which is based on geographical representation. Now, think about this. On that executive council, which will be the most important central governing body, Africa is allotted 10 seats. I do not think there is yet a nuclear power in Africa. I hope there is not.

But they are allotted 10 seats, Eastern Europe, where there have been two or three nuclear powers, are allotted 7 seats. Latin America is allotted 9, the Middle East and South Asia, 7 each, Western Europe and North America, 10, Asia, 8.

I would like to note that no one is guaranteed a seat on this executive council. The United States has the same chance of being chosen to sit on the executive council as, shall we say, Jamaica.

Not only will this organization make policies for this vitally important issue about whose importance we have heard a great deal in the last few days, but the countries making policy will not necessarily be world powers, as powers with nuclear weapons, or with any experience with nuclear weapons. They will simply be member States who have signed on the CTBT.

Not only that, there will be a technical support group, but that technical support group will be chosen by the same executive council which I have just described, which is chosen by people the overwhelming majority of whom do not themselves have any experience or competence with nuclear questions, much less nuclear weapons.

"Each State party shall have the right to participate in the international exchange of data, and to have access to all data made available to the International Data Center." This is a very interesting provision, and it parallels a provision in the resolutions establishing the International Atomic Energy Agency.

The International Atomic Energy Agency was itself, conceived and founded for the purpose of preventing proliferation of nuclear weapons, and it has been, through the years, staffed by a good many men of great professional skill and of genuine expertise and dedication, but not only has the IAEA not been able to stop proliferation, it has more than once served itself as a source of proliferation. This is the irony of the harm that good men do, and the harm that good organizations conceived with the best of intentions do.

The IAEA has more than once served as a source of proliferation, as member States take from it technical information and reactors "for peaceful uses," it is always said. The fact is, we know that several rogue States have managed to take from the IAEA and their membership on the IAEA, under the rules of the IAEA, the reactors and the technology with which they have launched their own projects for creating atoms not for peace, but for weapons.

I believe that the CTBT organization will also serve as a source of technical expertise—in much the same way that the IAEA has served as a source of technical expertise, and that those who today claim the treaty will end nuclear testing once and for all will be greatly shocked, but it should not surprise the rest of us.

I just might remind you, Mr. Chairman, that at the time that Iraq was sitting on the governing board of the IAEA—at the very same time that it was engaged in massive efforts to build its own nuclear capacity and to make war on all of its neighbors.

Mr. Chairman, President Clinton and his administration are once again urging Americans to take what amounts to a long step toward unilateral nuclear disarmament at a time of unprecedented vulnerability for the United States. I believe it is enormously important that the Senate reject this treaty.

Thank you.

[The prepared statement of Ambassador Kirkpatrick follows:]

PREPARED STATEMENT OF HON. JEANE K. KIRKPATRICK

Thank you, Mr. Chairman, for inviting me to testify before this distinguished Committee on this vitally important subject.

I accepted your invitation, Mr. Chairman, because I believe it is essential that this nation's defenses be adequate to cope with the growing dangers we face from hostile powers possessing weapons of mass destruction and effective means of delivery.

Mr. Chairman, I encountered this subject and became concerned about this issue, as a consequence of having served on President Reagan's "Blue Ribbon Presidential Task Force on Nuclear Products" in 1985; on the "President's Foreign Intelligence Advisory Board (PFIAB)" from 1985 to 1990; on the Defense Policy Review Board from 1985 to 1992. Then, after being appointed by Secretary of Defense Dick Cheney in 1991-1992, I chaired the "Fail Safe and Risk Reduction" Committee (generally referred to by its acronym as the FARR Committee) charged with reviewing the United States Nuclear Command and Control System.

This experience made a strong impression on me concerning the dangers of proliferating nuclear and missile technology. As everyone who is interested in these matters now knows, the number of countries capable of producing and delivering nuclear weapons and other weapons of mass destruction, has increased and is increasing as we speak, and includes several of the world's most aggressive, repressive, destructive countries—North Korea, Iran, Iraq—as well as a Russia less stable than we would prefer and a China less benign.

We know, moreover, that other regimes with little regard for the rule of law or human rights work to acquire weapons of mass destruction, and that against these weapons the United States *can rely only on its nuclear deterrent*. We have no other defense.

The current dangers have been documented and described in the past year by the Rumsfeld and Cox Commissions. The Rumsfeld Commission, which had "unprecedented access to the most sensitive and highly classified information" concluded:

- That, "the threat to the United States posed by these emerging capabilities is broader, more mature, and evolving more rapidly than has been reported."
- That, "several countries, including Iraq, will be able to inflict major damage on the United States within about five years."

The Cox Commission describes the shocking success of China in buying and stealing the most advanced U.S. thermonuclear missile and space technology (which they quickly made available to other governments) enabling China to: "Pose a direct threat to the United States, our friends, and allies or our forces."

We know from the work of the Rumsfeld Commission and the Cox Commission that at least two countries which already have nuclear weapons—North Korea and China—have recently been engaged in intensive, successful efforts to upgrade the weapons, and the missiles which carry them.

It is disturbing to me, Mr. Chairman, that President Clinton has not been mobilized to make the defense of the American people against these proliferating threats a top priority.

Instead, confronted with these dangers, President Clinton and his Administration have placed one obstacle after another in the path of development of an effective missile defense. They have imposed disabling requirements and unnecessary delays on the development and deployment of effective national and theater missile defenses.

The President has urged that we give priority to preserving an extended, out-moded ABM Treaty interpreted to be maximally constraining. Now, he urges on us the Comprehensive Test Ban Treaty which would commit the U.S. government to carrying out no nuclear tests—ever.

The United States has already lived through the longest-ever moratorium on nuclear tests. Now with the CTBT he proposes to extend the moratorium forever.

There are several reasons that it would be imprudent for the United States to make this commitment never to conduct another explosive nuclear test. I will summarize briefly those which seem to me most compelling.

First is the fact that our government takes its commitments seriously. If we were to sign this treaty, we would feel bound by its terms. We would not feel free to violate it at will as many governments will. We would not conduct explosive tests.

Second, as everyone knows, this treaty cannot be verified. The CIA has recently publicly acknowledged that it cannot detect low-yield tests. It bothers me that we will not know when they are cheating and some will cheat.

Third, I learned from my service on the Blue Ribbon and FARR Committees that the safety and reliability of our nuclear stockpiles cannot be taken for granted, but must be monitored. Testing (banned forever by this proposed treaty) is a vital part of ascertaining and maintaining the reliability and safety of our nuclear weapons. It is also a necessary step in modernizing our nuclear weapons.

Testing is vital to maintaining the reliability and credibility of our nuclear deterrent.

The authors of this treaty understand how important testing is to maintaining the viability of nuclear weapons. The Preamble to the Treaty states, and I quote:

Recognizing that the cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, constitutes an effective measure of nuclear disarmament and nonproliferation in all its aspects,

Further recognizing that an end to all such nuclear explosions will thus constitute a meaningful step in the realization of a systematic process to achieve nuclear disarmament.

Fourth, that deterrent has never been as important to the security of Americans as it is today with rogue states developing the capacity to attack our cities and our population. Americans and their allies are more vulnerable than we have ever been.

Mr. Chairman, the threat to Americans, its cities, and populations, is here and now. It has expanded dramatically, not only because of systematic Chinese theft of America's most important military secrets and because of the inadequate U.S. policies governing the safekeeping and transfer of technology, but also because several countries who are signatories of the Nuclear Nonproliferation Treaty *have violated their commitments under the Treaty*. Specifically, they have violated commitments:

"not to transfer . . . or in any way assist, encourage, or induce any non-nuclear weapon State to acquire nuclear weapons . . ."[Article I]

"not to receive the transfer . . . of nuclear weapons or other nuclear explosive devices . . ., not to manufacture or otherwise acquire . . . not to receive assistance in the manufacture of nuclear weapons or other nuclear explosive devices . . ."[Article II]

China is not a signatory of the NPT. Russia is. So are Iran, Iraq and Libya. North Korea, India, and Pakistan are not signatories. Obviously, whether or not a government has signed the NPT has little impact on their behavior with regard to proliferation.

That is the critical point concerning the arms control approach to national security. We cannot rely on this treaty to prevent the countries that are actually or potentially hostile to us from acquiring and testing nuclear arsenals and ballistic missiles. The evidence is clear.

Why then does President Clinton, whose decisions have diminished, delayed, and denied us development and deployment of effective missile defenses, now urge on us a treaty which would endanger the reliability of the nuclear deterrent—which is our only "defense" against a nuclear attack?

Mr. Chairman, the President and some other supporters of the Treaties argue that the action of the Senate in ratifying or rejecting the treaty will determine whether we end nuclear tests and proliferation forever. But that is not true. China, North Korea, Iraq, Iran do not follow our lead.

Finally, I should like to call the Committee's attention to the governance of the organization which will administer it. I note: "All State Parties are members. No State Party can be excluded." It will operate on the principle of one state, one vote, with an executive council that based on *geographical representation*, comprising, Africa is allotted ten seats; Eastern Europe seven, Latin America nine, the Middle East and South Asia seven; Western Europe and North America ten; Asia eight.

"*Each State Party* shall have the right to participate in the international exchange of data and to have access to all data made available to the International Data Centre."

Mr. Chairman, the International Atomic Energy Agency, conceived to prevent proliferation, and staffed with a good many first class professionals has not only been unable to stop proliferation, *it has more than once served as a source of proliferation* as member states take from it technical information and reactors—for peaceful uses it is always said.

The CTBT organization will also serve as a source of technical expertise. Those who today claim the Treaty will end nuclear testing once and for all will be greatly shocked. But it should not be a surprise to the rest of us.

Mr. Chairman, President Clinton and his Administration are once again urging Americans to take what amounts to a long step toward unilateral nuclear disarmament—at a time of unprecedented vulnerability. It is enormously important that the Senate reject this Treaty.

The CHAIRMAN. A very fine statement, Ambassador Kirkpatrick. I appreciate your coming so much.

Mr. Secretary Weinberger, we are delighted to have you here this morning.

**STATEMENT OF HON. CASPAR W. WEINBERGER, FORMER
SECRETARY OF DEFENSE**

Mr. WEINBERGER. Thank you, Mr. Chairman, members of the committee. It is always a privilege for me to testify before a committee of such distinction. I am honored to be here. I have a very short statement, and would be glad to try to take any questions after that.

Mr. Chairman, the essence of this question seems to me to come down to, if we need nuclear weapons, we have to know that they work. That is the essence of their deterrence. If there is uncertainty about that, the deterrent capability is weakened.

The only assurance that you have that they will work is to test them, and the only way to test them is the most effective way to test them, and all of the discussion in other committees, and a great deal of the discussion in the public, has been an attempt to show that the stockpile stewardship program will be an effective way of testing them all, although everyone agrees that it is not as effective as testing them in the way that we have done in the past with underground explosions, with all the precautions to prevent any of the escape of the material into the atmosphere.

You will have all kinds of statements made that the stewardship stockpile program will be tested by a computer model. We have had some less than reassuring statements that the computers that can do this best will be available in 2005, or 2008, which is a tacit admission that in the meantime the stockpile stewardship program as it is presently constituted is not an effective way of testing, and the only way to be sure that these weapons will work, and will be able to do their unique task, is test them, and test them in the most effective way possible.

The only way to test them is to do it by the means that we have used before that we have now eschewed for the time being, so basically the question comes down, as Ms. Kirkpatrick said, whether we are going to abstain from testing in perpetuity.

All of this discussion is about lesser means of testing, and it is not a question of stopping testing. The treaty does not purport to do that, and even when it purports to do that, as Ms. Kirkpatrick points out, and I agree fully with her, we are not going to be able to rely on many of the rogue countries that will do whatever is necessary to acquire this capability.

Nothing will encourage proliferation more than to tell these countries that the big stockpiles in the United States have not been tested, or that stockpiles of other countries have not been tested effectively, and if they think that is the case, they will be encouraged to believe that the deterrent is not as effective as it should be, and that they will be encouraged to try to acquire the kinds of weapons

which, through the testing that they can do, whether they promise to or not, will make them effective.

There is an extraordinarily naive editorial, which I have to call your attention to, in the New York Times. It says, the treaty's main effect would be to halt programs in other countries. It adds, that since no new nuclear weapons can be reliably developed without testing, ratification of the treaty by enough countries would freeze the nuclear weapons race worldwide. That to my mind is a degree of naivete that is extremely dangerous and is also, incidentally, not very true.

You have countries that have tested. You have two countries in the last year that have tested and demonstrated that they had nuclear capability in India and Pakistan. We have a number of weapons in our stockpile that have essentially been rebuilt, essentially been inspected from time to time, and deterioration has been found.

As is inevitable, the aging process affects weapons also, Mr. Chairman, unfortunately, and when a new component is put in to replace an old component, you do not know if it is going to work. You do not know if they are going to mesh together.

There is something—I do not know how many, but close to, I think it is safe to say, thousands of moving parts in these terrible weapons, and you have no way of knowing that all of these things are going to mesh by consulting a computer, particularly not if you have to wait till 2008 to get the kind of computer that will be reasonably reliable. So the question really comes down to is the kind of testing that is being done.

Other countries will test, other countries may be sure, or they may not be sure that theirs will work. If they are sure we have not received the absolute assurance that ours will work, we will not have any idea of being able to stop the proliferation of those countries trying. Any uncertainty about the effectiveness of our deterrent weakens that deterrent.

The whole point of a deterrent is the ability to be able to let hostile nations know, and let the world know that should an attack come, we have the capability of responding. Not a pleasant concept, not a good idea, but we do not make the world in which we live. We have to rely on the kinds of weapons we have to keep the peace.

And so I think the important thing to bear in mind here, Mr. Chairman, is really what the treaty means, and in the essence, the treaty means we would be committing ourselves in perpetuity, forever, not to use the most effective means of being able to assure us and the world that our stockpile works, and for that reason I would very much oppose the treaty, and I would hope the Senate would, too.

Thank you, sir.

The CHAIRMAN. Thank you, sir. Mr. Ambassador, we would be glad to hear from you.

STATEMENT OF HON. STEPHEN J. LEDOGAR, FORMER CHIEF NEGOTIATOR OF THE COMPREHENSIVE TEST BAN TREATY

Ambassador LEDOGAR. Mr. Chairman, distinguished members of the committee. Thank you for this opportunity to speak to you

about the Comprehensive Test Ban Treaty which is before the committee for consideration.

First, a few things about my background, which I would mention only because I think they are relevant to what I'll say about the treaty. After 4 years as an active duty Naval aviator and 5 years in private industry as a lawyer, I joined the Foreign Service and served for 38 years before retiring 2 years ago.

Most of my career I worked in political-military affairs and arms control, including stints as deputy chief of mission to NATO, press spokesman and member of the delegation to the Vietnam Paris peace talks.

And I'd like to point out that I'm a strong believer in nuclear deterrence and I know how central nuclear deterrence is to NATO. During my last 10 years of full time service, I was privileged to be an ambassador under Presidents Reagan, Bush and Clinton, serving in turn as head of several U.S. delegations in Vienna and Geneva. I was chief U.S. negotiator from start to finish of the CTBT. Currently, I'm a part-time consultant to the Department of State on national security matters.

As I understand your invitation, Mr. Chairman, I'm not here to give this committee the authoritative administration pitch on CTBT. Secretary Albright and others will do that. Rather, I'm here primarily as a resource to help recall and detail key elements of the treaty as they were fought out in the negotiating trenches between 1993 and signature in September 1996.

I should say, however, that not surprisingly, I fully support the treaty, believing that it is very much in the security interests of the United States. It was carefully negotiated by me and my multi-agency delegation throughout, always acting on fully cleared front channel instructions. And I'm prepared to try to explain and defend all of its key provisions and, if my memory serves, to try to give you any background you might be interested in having.

In the short time I have in this opening statement, I'll limit my discussion to just three issues that I believe are sources of some confusion. Over the course of the last few days, I have heard opinions expressed on the question of the CTBT's scope, its verification provisions, and its entry into force provisions. Some of the debate suggests to me that aspects of the negotiations have not yet been fully understood. I hope that I may help to shed some light on these issues. Last, I would like to address the likely international repercussions should the Senate fail to give its consent to ratification.

First of all on the scope. Let me address that issue as it develops in the negotiation. As the name suggests, the treaty imposes a comprehensive ban on all nuclear explosions, of any size, in any place. I have heard some critics of the treaty seek to cast doubt on whether Russia, in the negotiating and signing of the treaty, committed itself under treaty law to a truly comprehensive prohibition of any nuclear explosion, including an explosion or experiment or event of even the slightest nuclear yield. In other words, did Russia agree that hydronuclear experiments which do produce a nuclear yield, although usually very, very slight, would be banned and that hydrodynamic explosions, which have no yield because they do not reach criticality, would not be banned.

The answer is a categorical "yes." The Russians as well as the rest of the P-5 did commit themselves. That answer is substantiated by the record of the negotiations at almost any level of technicality and national security classification that is desired and permitted. More importantly, for the current debate, it is also substantiated by the public record of statements by high level Russian officials as their position on the question of thresholds evolved and fell into line with the consensus that emerged.

It is important to recall that each of the five nuclear weapons states began the CTBT negotiations desirous of a quiet understanding among themselves that some low level of nuclear explosions or experiments that did produce nuclear yield would be acceptable, at least among themselves, despite the broad treaty prohibition of "any nuclear weapon test explosion or any other nuclear explosion." Until August 1995, the beginning of the final year of negotiations, the U.S. pushed for agreement on a very low threshold of nuclear yield.

Our position was not popular among the P-5. Because of our greater test experience and technical capabilities, we could conceivably gain useful data from events of almost insignificant yield. The other four argued that they needed a higher threshold in order to gain any useful data. In some cases, the thresholds they pushed for were politically impossible to square with the notion of a comprehensive test ban. Russia, for example, insisted that if there was going to be any threshold among the five, it would have to allow for so-called experiments with nuclear yields of up to 10 tons of TNT equivalent.

The dispute among the five threatened to halt the negotiations, as it became increasingly known to others that the five were squabbling with each other about how much wiggle room would be left to them when they signed onto a text that said simply that nuclear explosions would be banned.

And as the arcane and jargon filled complexities of the nuclear testing communities in Novaya Zemlya, Lop Nor, Mururoa and Nevada became more widely understood, the non-nuclear states and broad public opinion increasingly insisted that the five should be allowed no tolerance, not even for the smallest possible nuclear yields. A ban should be a ban. The answer to this dilemma should be no threshold for anybody. In other words, zero should mean zero.

On August 11, 1995 President Clinton announced that the United States was revising its prior position on the threshold question and would henceforth argue to the other four nuclear weapons states that no tests that produced a nuclear yield should be allowed to anyone under the treaty. The Russians, who were miffed at being taken by surprise, climbed down from their original positions slowly and painfully. It took until April 1996 before they signed onto the sweeping categorical prohibition that is found in the final text. They never did like the word "zero" which was bandied about in public and actually once used by Boris Yeltsin.

Instead, they announced that they embraced a treaty with no thresholds whatsoever. In the confidential negotiations among the five nuclear weapons states that went on the entire time the broader CTBT negotiations continued, it was clearly understood that the

boundary line, that is, the zero line, between what would be prohibited to all under the treaty and what would not be prohibited, would be precisely defined by the question of nuclear yield or criticality. If what you did produced any nuclear yield whatsoever, it would not be allowed. If it didn't, it was allowed.

Another issue I would like to address is how the treaty's verification regime developed and how it benefits the United States. I will leave it to others more expert than I to provide more precise assessments of U.S. monitoring capabilities. The point I would like to stress here is that the U.S. succeeded in the negotiations in getting virtually every thing the intelligence community and other parts of the government wanted from the treaty, wanted and were prepared to pay for, to strengthen our ability to detect and deter cheating and to seek appropriate redress if cheating did occur.

At the same time, we succeeded in getting virtually everything the Defense Department and others wanted to insure the protection of sensitive national security information. Let me give you several examples.

Concerning the use of national technical means, the United States fought like mad to win acceptance of a state's rights to use evidence acquired through national technical means as it saw fit when requesting an onsite inspection. But we did not want to be forced to reveal any information we believed would be better kept private. Now, this was a "red line" issue for the United States. Many of our negotiating partners were adamantly opposed to giving the U.S. what they considered was a clear advantage and a license to spy.

Yes, it is true that the U.S. has satellite surveillance and intercept capabilities that surpass anything others have, but is it logical to penalize and ignore the evidence of the tall person with good eyesight who can see the crime committed across the room? Eventually the U.S. position prevailed and is incorporated in the treaty.

This treaty provides for onsite inspections on request by any treaty party with the approval of the executive council. No state can refuse an inspection. The U.S. position from the start was that onsite inspections were critical to provide us with added confidence that we could detect violations. And, if inspections were to be effective, they had to be conducted absolutely as quickly as possible after a suspicion arose, using a range of techniques with as few restrictions as possible.

However, the U.S. also had to be concerned with its defensive posture as well as an offensive one. It was necessary to insure that sensitive national security information would be protected in the event of an inspection on U.S. territory. The U.S. crafted a complicated, highly detailed proposal that balanced our offensive and defensive needs. There was resistance from some of our negotiating partners. However, by the time we were through, the treaty read pretty much like the original U.S. position paper that had been put together jointly by the Departments of Defense, Energy and State, the intelligence community and the then existing Arms Control Agency.

I would like to touch on the composition of the International Monitoring System, four networks of different types of remote sen-

sors encompassing 321 stations. I believe I have heard questions about its value added. The intelligence community, working through the larger interagency community, had a list of requirements. They wanted certain technologies and they wanted certain stations that would fill gaps and complement existing national monitoring capabilities.

The U.S. delegation delivered nearly everything requested. You have only to look at the coverage that would be established if the treaty enters into force, the coverage in Russia, China and the Middle East, to see the augmentation of U.S. capabilities and the range of technologies to appreciate the potential value added of an International Monitoring System.

Some people have criticized the treaty because it does not provide for sanctions against the state, it has violated it. This criticism strikes me as ill-informed. Consistent with traditional U.S. policy, I was under strict instructions to object to the inclusion of sanctions. The U.S. view, which I believe this committee strongly endorses, is that we will not agree to appoint an international organization to be not just the investigator and special prosecutor, but also the judge, jury and jailer. The U.S. reserves for itself the authority to make judgments about compliance. And, we reserve for a body higher than the one established by this treaty, namely, the United Nations Security Council, in which we have a veto, the authority to levy sanctions or other measures. This is U.S. policy and this policy is reflected in the treaty.

Now a word on the treaty's entry into force requirements. These have been the topic of much discussion and have even been offered as a reason for why the U.S. should postpone its ratification. As you know, the treaty does not enter into force until 44 named states have deposited their instruments of ratification. The named states are those that have nuclear research or power reactors and were at the same time members of the Conference on Disarmament.

It is true that this requirement erects a high barrier. It also, in my opinion, reflects a core reality from which there is no escape. The treaty would not work without the participation of all five nuclear weapons states and the three so-called threshold states, India, Pakistan and Israel, who are not yet bound by the non-proliferation treaty.

The U.S. would not foreswear all future testing if China and Russia were not similarly bound, and vice versa. China ties its adherence to India, India to Pakistan, and so forth. It's an interlocking reality—a political reality among the eight. Israeli adherence is demanded by all. In my opinion, it did not much matter what exact formulation was used. The reality was that all eight were required.

It does not follow that the U.S. can afford to wait until the other 43 have ratified the treaty. I have always believed that if you want something, you must get out in front. That is the American way. We must lead, not follow meekly behind. It is our burden and our advantage that other states will follow our lead. The day the United States submitted its ratification of the Chemical Weapons Convention, China and four other countries followed, the same day. Cuba, Iran, Pakistan and Russia followed shortly thereafter.

What if the U.S. chooses not to ratify this treaty? I believe my experience in the CTBT negotiations and many years of representing the United States in multilateral diplomacy render me competent to speculate on the international reaction to such a possibility. I am not given to hyperbole, but I believe it is not an exaggeration to say that there will be jubilation among our foes and despair among our allies and friends.

Iran, Iraq, North Korea and other states that harbor nuclear aspirations surely will feel the constraints loosening. Our allies and other friends will feel deserted and betrayed. The global nuclear nonproliferation regime will be endangered. Some isolationists may not believe this regime is worth protecting and that the U.S. can take care of the problem itself. But we need cooperation in my judgment from states like Russia and our European allies, if only to help control exports if we are to prevent states from acquiring nuclear weapons. France, for example, which has already ratified the CTBT, will be even less responsive to U.S. pleas to contain Iraq and Iran if the U.S. walks away from this treaty, whose successful negotiation the United States led.

I am not an expert on South Asian policy, but I believe that if the U.S. fails to ratify the CTBT, we should brace ourselves for more Indian tests. Pakistan, of course, would match India test for test.

The CHAIRMAN. Mr. Ambassador, would you forgive me please? We have a vote on and I suggest that Senators go cast their votes and I will stay here, then it may save time.

Senator BOXER. Mr. Chairman, I just wondered, when we come back, we will have an opportunity to question, is that correct?

The CHAIRMAN. Sure.

Ambassador LEDOGAR. I only have about two more sentences.

China will not ratify the test ban if the U.S. does not. We can expect China to put itself in a position to resume testing, especially if India tests, and the chain reaction may not end there. Japan could face pressure to reconsider its nuclear abstinence if China and India buildup their nuclear forces. And Russia, of course, remains a wild card.

I trust you will have questions and I am prepared to respond.

[The prepared statement of Ambassador Ledogar follows:]

PREPARED STATEMENT OF HON. STEPHEN J. LEDOGAR

Mr. Chairman, distinguished members of the committee, thank you for this opportunity to speak to you about the Comprehensive Nuclear Test Ban Treaty, which is before your committee for consideration.

First, a few things about my background which I mention only because I think they are relevant to what I will say about the Treaty. After four years of active duty as a Naval Aviator and five years in Private Industry as a lawyer, I joined the Foreign Service and served for 38 years before retiring two years ago. Most of my career, I worked in Political-Military Affairs and Arms Control including stints as Deputy Chief of Mission to NATO, and press spokesman and member of the delegation to the Vietnam Peace Talks in Paris. I am a strong believer in nuclear deterrence and I know how central it is to NATO. During my last ten years of full time service, I was privileged to be an Ambassador under Presidents Reagan, Bush and Clinton, serving in turn as head of several U.S. delegations in Vienna and Geneva. I was chief U.S. negotiator from start to finish of the CTBT. Currently, I'm a part-time consultant to the Department of State on national security matters.

As I understand your invitation, Mr. Chairman, I'm not here to give this committee the authoritative administration pitch on the CTBT. Secretary Albright and others will do that. Rather, I'm here primarily as a resource to help recall and detail

key elements of the Treaty as they were fought out in the negotiating trenches between 1993 and signature in September 1996. I should say, however, that, not surprisingly, I fully support the Treaty believing that it is very much in the security interests of the United States. It was carefully negotiated by me and my multi-agency delegation throughout, always acting on fully cleared front channel instructions. I'm prepared to try to explain and defend all its key provisions, and if memory serves to try to give you any background you might be interested in having.

In the short time I have in this opening statement, I will limit my discussion to just three issues that I believe are sources of some confusion. Over the course of the last few days, I have heard opinions expressed on the question of the CTBT's scope, its verification provisions, and its entry into force provisions. Some of the debate suggests to me that aspects of the negotiations have not yet been fully understood. I hope that I may help to shed some light on these issues. Lastly, I would like to address the likely international repercussions should the Senate fail to give its consent to ratification.

SCOPE OF THE CTBT

First, let me address the scope of the CTBT. As the name suggests, the Treaty imposes a comprehensive ban on all nuclear explosions, of any size, in any place.

I have heard some critics of the Treaty seek to cast doubt on whether Russia, in the negotiation and signing of the Treaty, committed itself under treaty law to a truly comprehensive prohibition of any nuclear explosion, including an explosion/experiment/event of even the slightest nuclear yield. In other words, did Russia agree that hydronuclear experiments (which do produce a nuclear yield, although very, very slight) would be banned, and that hydrodynamic explosions (which have no yield because they do not reach criticality) would not be banned?

The answer is a categoric "yes." The Russians, as well as the other weapon states, did commit themselves. That answer is substantiated by the record of the negotiations at almost any level of technicality (and national security classification) that is desired and permitted. More importantly for the current debate, it is also substantiated by the public record of statements by high level Russian officials as their position on the question of thresholds evolved and fell into line with the consensus that emerged.

It is important to recall that each of the five nuclear weapon states began the CTBT negotiations desirous of a quiet understanding among themselves that some low level nuclear explosions/experiments that did produce nuclear yield would be acceptable at least among themselves despite the broad treaty prohibition of "any nuclear weapon test explosion or any other nuclear explosion." Until August of 1995, the beginning of the final year of negotiations, the U.S. pushed for agreement on a very low threshold of nuclear yield. Our position was not popular among the P-5. Because of our greater test experience and technical capabilities, we could conceivably gain useful data from events of almost insignificant yield. The other four argued that they needed a higher threshold in order to gain any useful data. In some cases the thresholds they pushed for were politically impossible to square with the notion of a comprehensive test *ban*. Russia for example insisted that if there was going to be any threshold among the five it would have to allow for so-called experiments with nuclear yields of up to ten tons of TNT equivalent.

The dispute among the five threatened to halt the negotiations as it became increasingly known to others that the five were squabbling with each other about how much wiggle room would be left to them when they signed onto a text that said simply that nuclear explosions would be banned. As the arcane and jargon filled complexities of the nuclear testing communities in Novaya Zemlya, Lop Nor, Mururoa, and Nevada became more widely understood, the nonnuclear states and broad public opinion increasingly insisted that the five should be allowed no tolerance—not even for the smallest possible nuclear yields. A ban should be a ban. The answer to this dilemma should be no threshold for anybody; i.e., zero means zero.

On August 11, 1995, President Clinton announced that the United States was revising its prior position on the threshold question and would henceforth argue to the other four nuclear weapon states that no tests that produced a nuclear yield should be allowed to anyone under the treaty. The Russians, who were miffed at being taken by surprise, climbed down from their original position slowly and painfully. It took until April of 1996 before they signed onto the sweeping, categoric prohibition that is found in the final text. They never did like the "zero" word which was bandied around in public (and actually used once by Boris Yeltsin). Instead, they announced that they embraced a treaty with no threshold whatsoever. In the confidential negotiations among the five nuclear weapon states that went on the entire time the broader CTBT negotiations continued, it was clearly understood and

that the boundary line—the “zero line” between what would be prohibited to all under the treaty and what would not be prohibited—was precisely defined by the question of nuclear yield or criticality. If what you did produced any yield whatsoever, it was not allowed. If it didn't, it was allowed.

CTBT VERIFICATION REGIME

Another issue I would like to address is how the Treaty's verification regime developed and how it benefits the U.S. I will leave it to others more expert than I to provide precise assessments of U.S. monitoring capabilities. The point I would like to stress here is that the U.S. succeeded in the negotiations in getting virtually everything the intelligence community and other parts of the government wanted from the Treaty to strengthen our ability to detect and deter cheating and to seek appropriate redress if cheating did occur. At the same time, we succeeded in getting virtually everything the Defense Department and others wanted to ensure the protection of sensitive national security information. Let me give you several examples.

Concerning the use of National Technical Means, the U.S. fought like mad to win acceptance of a state's right to use evidence acquired through NTM, as it saw fit, when requesting an on-site inspection. But we did not want to be forced to reveal any information we believed would be better kept private. This was a “red line” position for the U.S. Many of our negotiating partners were adamantly opposed to giving the U.S. what they considered was a clear advantage and a license to spy. Yes, it is true that the U.S. has satellite surveillance and intercept capabilities that surpass others', but is it logical to penalize and ignore the evidence of the tall person with good eyesight who can see the crime committed across the room? The U.S. position prevailed.

This Treaty provides for on-site inspections on request by any Treaty party and with the approval of the Executive Council. No state can refuse an inspection. The U.S. position from the start was that on-site inspections were critical to provide us with added confidence that we could detect violations. And, if inspections were to be effective, they had to be conducted absolutely as quickly as possible after a suspicion arose, using a range of techniques with as few restrictions as possible. However, the U.S. also had to be concerned with its defensive posture, as well as an offensive one. It was necessary to ensure that sensitive national security information would be protected in the event of an inspection on U.S. territory. The U.S. crafted a complicated, highly detailed, proposal that balanced our offensive and defensive needs. There was resistance from some of our negotiating partners. However, by the time we were through, the Treaty read pretty much like the original U.S. paper put together jointly by the Departments of Defense, Energy and State, the Intelligence Community, and the then-existing Arms Control Agency.

I would like to touch on the composition of the International Monitoring System—four networks of different types of remote sensors encompassing 321 stations—because I have heard questions about its value added. The intelligence community, working through the larger interagency community, had a list of requirements. They wanted certain technologies and they wanted certain stations that would fill gaps and complement existing national monitoring capabilities. The U.S. delegation delivered nearly everything requested. You have only to look at the coverage in Russia, China and the Middle East, and the range of technologies, to appreciate the potential value added of the IMS.

Some people have criticized the Treaty because it does not provide for sanctions against a state that has violated it. This criticism strikes me as ill informed. Consistent with traditional U.S. policy, I was under strict instructions to object to the inclusion of sanctions. The U.S. view, which I believe this Committee strongly endorses, is that we will not agree to appoint an international organization to be not just the investigator and special prosecutor, but also the judge, jury, and jailer. The U.S. reserves for itself the authority to make judgements about compliance. And we reserve for a higher body, the United Nations Security Council in which we have a veto, the authority to levy sanctions or other measures. This is U.S. policy. This is the Treaty's policy.

ENTRY INTO FORCE REQUIREMENTS

The Treaty's entry into force requirements have been the topic of much discussion and even offered as a reason for why the U.S. should postpone its ratification. As you know, the Treaty does not enter into force until 44 named states have deposited their instruments of ratification. The named states are those that have nuclear research or reactor reactors and were members of the Conference on Disarmament.

It is true that this requirement erects a high barrier. It also, in my opinion, reflects a core reality from which there was no escape. The Treaty would not work

without the participation of the five nuclear weapon states and the three so-called threshold states, India, Pakistan and Israel, who are not yet bound by the NPT. The U.S. would not foreswear all future testing if China and Russia were not similarly bound. China ties its adherence to India. India to Pakistan. And Israeli adherence was demanded by all. In my opinion, it did not much matter what the exact formulation was. The reality stood that all eight were required.

It does not follow that the U.S. can afford to wait until the other 43 have ratified the Treaty. I have always believed that if you want something, you must get out in front. This is the American way. We must lead, not follow meekly behind. It is our burden and our advantage that other states will follow our lead. The day the United States submitted its ratification to the Chemical Weapons Convention, China and four other countries followed. Cuba, Iran, Pakistan, and Russia followed shortly thereafter.

What if the United States chooses not to ratify this treaty? I believe that my experience in the CTBT negotiations and many years of representing the U.S. in multilateral diplomacy, render me competent to speculate on the international reaction to such a possibility.

I am not given to hyperbole, but I believe it is not an exaggeration to say that there will be jubilation among our foes and despair among our friends. Iran, Iraq, North Korea and other states that harbor nuclear aspirations surely will feel the constraints loosening. Our allies and friends will feel deserted and betrayed. The global nuclear nonproliferation regime will be endangered. Some isolationists may not believe this regime is worth protecting; that the U.S. can take care of the problem itself. But we need cooperation from states like Russia and our European allies in controlling exports if we are to prevent states from acquiring nuclear weapons. France, for example, which has already ratified the CTBT, will be even less inclined to heed U.S. pleas to contain Iraq and Iran if the U.S. walks away from the Treaty, whose successful negotiations the U.S. led.

I am not an expert in South Asia policy, but I believe that if the U.S. fails to ratify the CTBT we should brace ourselves for more Indian tests. Pakistan, of course, would match India test for test. China will not ratify the test ban if the U.S. does not. We can expect China to ready itself to resume testing, especially if India tests. And the chain reaction may not end there. Japan will face pressure to reconsider its nuclear abstinence if China and India are developing nuclear forces. And Russia, of course, remains a wild card.

I trust you have questions about the negotiating history or certain Treaty elements. I would be pleased to provide whatever information I can.

The CHAIRMAN. All right. We are going to hopscotch on this. The Senator from Minnesota will take his 5 minutes and then I will go and Chuck Hagel has already gone and will come back. We have to play a tag game here.

Senator GRAMS. Thank you very much. I will not be able to come back, so I am going to stay and keep the hearing going until some of the others come back so I have the opportunity to ask some questions and again, I appreciate your being here and your testimony.

You know the original official negotiating position of the Clinton administration in Geneva was to have a treaty which, one, had a definite duration, 10 years; two, permitted low yield tests, 4 pounds, and was also verifiable. Those were some of the conditions they set out with.

If the administration had negotiated a treaty along those lines, I think it would have had a better chance of being ratified today. Instead, I think we have ended up with a treaty of unlimited duration, zero yield, which is clearly unverifiable. So my question is, and I'll start with Ms. Kirkpatrick, do you think it was wise for the Clinton administration to move so far from what was our original position?

Ambassador KIRKPATRICK. No, Senator Grams, I do not. I think the original position was a reasonable one, which provided—first of all, it provided for verification and verifiability, but it also provided

for entering the treaty regime with the provision that it would not last forever. We could see how it worked. We could see how other nations behaved in that regime and if it didn't work in 10 years, it would self-destruct.

I think that was reasonable and workable, and I think this one is not. It is too sweeping, it is too universal, it is binding for too long, and it is unverifiable, as I said in my testimony.

Senator GRAMS. Mr. Ledogar, maybe I would ask you to answer the same question. Where the administration began with and where we ended up with seems like a huge shift, and I know you were a part of the negotiating. Maybe you could answer that question as well.

Ambassador LEDOGAR. Yes, I would be glad to. I agree with Ambassador Kirkpatrick that it was a reasonable position. One problem was that it was totally non-negotiable. We had no support, not a single country, not our best friends would support the so-called "10 year easy-out" proposal which was originally put on the table by us. And that attitude sprang from a number of events, but I would say that the then ongoing Nonproliferation Review and Extension Conference was very important in setting up a contrast that was thrown back at the United States delegation. Critics said that you are asking for the unlimited extension of the nonproliferation treaty and yet you will commit yourself only to 10 years' duration of the test ban. And having charged up that hill many times and taken quite a few hits, I was among those that asked Washington to reconsider. It was a tough decision but the interagency finally decided that they could reconsider, with a set of safeguards, and resort to the supreme national interest clause, which is very important to the presentation, including to this committee, of the whole package before it.

Mr. WEINBERGER. I think it was a very unwise thing. It is a part of the whole process that an agreement is far more important than the content, that all you want is the agreement, and you'll do anything to get the agreement, and this means that you have to change a well-considered position because somebody else won't agree to it.

If we had adopted that philosophy and that practice during President Reagan's term, we would not have a treaty that bans all intermediate range nuclear arms today, and longer range weapons, the intermediate range. That was the—when we went in with the zero option originally in October, I think it was, of 1981, we were pretty well laughed off the international stage because we were proposing something that everybody knew the Soviets would never agree to, so it was clearly just a ploy by Mr. Reagan and on and on and on and all the editorials poured out about what a terrible thing it was to do. Seven years later, they agreed to it, word for word, practically speaking. We held firm. We felt the content was far more important than getting an agreement.

And here is exactly the opposite philosophy prevails. If you want an agreement, you have to do what everybody else wants, regardless of how the content affects the United States or doesn't affect the United States. So I think it was a very unwise thing to do and I think the results are before us.

Senator GRAMS. It seems I hear the same about the Kyoto treaty. The agreement was worth more than the contents. Let me quote what John Holliman—I think you know John Holliman, senior Clinton arms controller, who criticized this. And some of the things he had to say, and I quote, “the United States views on verification are well known. We would have preferred stronger measures, especially in the decisionmaking process, for onsite inspections and in numerous specific provisions affecting the practical implementation of the inspection regime.

“I feel no need to defend this view. The mission of the Conference on Disarmament is not to erect political symbols, but to negotiate enforceable agreements. That requires effective verification, not as the preference of any party, but as the sine qua non of this body’s work.

“On verification overall, the treaty tilts toward the defense in a way that has forced the United States to conclude reluctantly that it can accept barely the balance that Ambassador Romaker has crafted.” And I apologize, I don’t have my glasses on so it is hard for me to see all this.

So there are some concerns there. Also, we have been discovering defects within our own stockpiles right up until 1992 and I think, Ms. Kirkpatrick, you have mentioned that we have been under a ban for testing for many, many years now, so we are already far behind in some of these areas. But finding defects up until 1992 in the test ban.

So one might wonder why since 1992 not a single warhead has been relined, in other words, removed from the inventory because of concerns over performance and safety. Is it because somehow by magic our stockpile self-perfected in 1992, or is it that we cannot discover defects without nuclear testing itself. Ms. Kirkpatrick?

Ambassador KIRKPATRICK. Senator Grams, I think it is uncertain, at best, how effective the various kinds of simulations are or will be. The efforts that we make without testing, without explosive testing, to verify the reliability and condition of our stockpiles yield uncertain results and I think we cannot have confidence in them at the level that we could previously have confidence.

Senator GRAMS. Again, without being able to verify all the testing, Mr. Weinberger, can we count on having a reliable stockpile without testing?

Mr. WEINBERGER. No, we cannot, and even if we wait until 2007 or 2008 when these new computers come online, as the Secretary of Defense testified yesterday and today, you will still not have the kind of reliability that you get from explosive testing. It is a substitute for it. It is something less good. And that is what the treaty does, it forces everybody to use, if they all complied with it, to use something that is less effective than the most effective method of testing for reliability so it doesn’t ban testing, it doesn’t ban proliferation, it doesn’t ban anything except the most effective means of testing.

Senator GRAMS. But that is only for some of the most sophisticated. When you have some less sophisticated nuclear weapons you wouldn’t need this type of testing, would you, so it still puts us at a disadvantage.

Mr. WEINBERGER. Well, yes, and it is the old story about an inaccurate nuclear weapon can still do an enormous amount of damage and that is why you want to have them tested, to make sure that they will do the job for which they are intended. It is a horrible job, but our deterrence, our safety depends on it.

Senator GRAMS. Mr. Ledogar, I read an article earlier this week that Mr. Adamov, who heads up the nuclear programs in Russia, and when Mr. Weinberger mentioned about the new computers coming online, the most sophisticated computers, the report basically stated that somehow the administration had given him the impression that the United States, if they would sign this treaty, would provide them with these type of computers in order for them to do similar type of tests on computers. Now, these are things, computers we do not want to sell.

We have had many arguments on the floor of the Senate about, worried about having this kind of technology stolen from us at the labs, but yet are we willing to give this information to the Russians in order for them to do computerized testing without doing actual testing? Was that part of the plan at all, or is this report in error?

Ambassador LEDOGAR. The report is not in error insofar as it reflects what the Russian general said. It is in error insofar as it suggests that the United States would even consider giving those sophisticated computers to the Russians. Now, I have had that on the authority of very senior officials at the Department of Energy. I was not on the trip, and I only have personal knowledge of the news stories.

Senator GRAMS. So you are saying this administration would not commit and has not, behind closed doors, indicated to the Russians that we would share this type of computer information with them. We have not done that.

Ambassador LEDOGAR. That is correct. However, Senator, I must say that I am not technically an administration spokesman. I am a contractor now.

Senator GRAMS. Maybe we can ask Madeleine Albright this afternoon.

Ambassador LEDOGAR. This afternoon you have the opportunity. If I may say so, with all due respect, if I believed, as Secretary Weinberger does, that the stockpile is already or will quickly in the future become unreliable, I certainly would not support the treaty, but I believe the opposite, and I think that the bulk of the evidence—provided that the science-based stockpile stewardship program continues to be funded, and that the annual certifications with the cooperation of the Congress continue to take place—gives the assurance that, should there be any problem in the future, it will be discovered, and that if it is discovered, the appropriate steps will be taken, and it is on that basis that this administration and the bulk of supporters of ratification believe that it is safe for us to go forward without explosive testing.

The amount of other testing that goes on is stupendous, and very expensive. This afternoon you will have Dr. Garwin, and I would hope that you could put to a highly qualified nuclear physicist like him the questions and get the assurances that are the basis for my beliefs.

Senator GRAMS. Thank you. We have many experts on both sides. That is what makes this debate so much harder to understand. I have to turn the gavel over to Senator Hagel, and also I would like to ask to place statements by the current laboratory directors in support of testing into the record, if I could, at the same time.

[The statements referred to follow:]

FORMER LABORATORY DIRECTORS OPPOSE THE CTBT

"I urge you to oppose the Comprehensive Test Ban Treaty (CTBT). No previous Administration, either Democrat or Republican, ever supported the unverifiable, zero yield, indefinite duration CTBT now before the Senate. The reason for this is simple. Under a long-duration test ban, confidence in the nuclear stockpile will erode for a variety of reasons."

ROGER BATZEL, *Director Emeritus*, response to a request for views by Chairman Helms, October 5, 1999.

"Without nuclear testing, confidence in the stockpile will decline. The U.S. capability to develop weapons will be degraded by the eventual loss of all nuclear test experienced weapons experts who developed the stockpile."

". . . For the U.S., the CTBT would be a 'catch-22': without nuclear testing, there is a growing uncertainty in our estimates of stockpile reliability; without nuclear testing, experts cannot quantify this uncertainty."

JOHN NUCKOLLS, *Director Emeritus*, response to a request for views from Chairman Helms, September 29, 1999.

"I have seen and studied a copy of your letter you wrote to President Clinton on January 21. I was impressed by your statements, and I am happy you made them."

". . . The point I must make is that, in the long run, knowledge and ability to produce nuclear weapons will be widely available. To believe that, in the long run, proliferation of nuclear weapons is avoidable is wishful thinking and dangerous. It is the more dangerous because it is a point of view that the public is eager to accept. Thus politicians are tempted to gain popularity by supporting false hopes."

EDWARD TELLER, *Director Emeritus*, letter to Chairman Helms, February 4, 1998.

"Of course, if nuclear testing were allowed, we would gain greater confidence in the new tools. We could validate these tools more readily, as well as validate some of the new remanufacturing techniques. One to two tests per year would serve such a function quite well. Yields of 10 kt would be sufficient in most cases. Yields of 1 kt would be of substantial help."

S.S. HECKER, *Director of Los Alamos National Laboratory*, response to Senator Kyl, September 24, 1997.

"From a purely technical standpoint, some level of nuclear testing would be a useful addition to the SSMP to address the effects of aging-related changes on weapon safety and reliability, and to validate the capabilities of the next generation of weapon scientists and their experimental and computational facilities, particularly in addressing hydrodynamic phenomena related to boosted primaries."

C. BRUCE TARTER, *Director of Lawrence Livermore National Laboratory*, response to Senator Kyl, September 29, 1997.

"A strong Stockpile Stewardship and Maintenance Program is necessary to underwrite confidence. A program of 500-ton experiments would significantly reduce the technical risks."

Joint statement by Laboratory Directors, 1995.

Senator HAGEL. Senator, thank you. Let me add my welcome to our three highly admired and distinguished witnesses. I would like to ask each of you a question. Ambassador Kirkpatrick and Secretary Weinberger, you obviously have laid out a rather compelling sense of why this treaty should be defeated, and with that compelling testimony I would ask each of you what, then, should we do?

What is the answer? Rewrite a treaty, start anew, do not pay attention to it?

You lay out the threats of this new borderless world we live in rather directly, and in a compelling way. I think what we need to do now is, as we deal with the immediacy of this issue, move forward. We must take this out of the political swamp that it has found itself in and deal with the relevant issues, and that is, how do we build a better world a safer world for mankind? I would be most interested in your thoughts, Madam Ambassador.

Ambassador KIRKPATRICK. Senator Hagel, thank you very much. Do you mean not simply with regard to nuclear weapons, but a better world, period?

Senator HAGEL. Well, any advice you can proffer, but I would like you to stay focused on this, because we hear great debate about how this is a bad treaty and we should defeat it and drive a stake through its heart, but what, then, should we do?

Ambassador KIRKPATRICK. I think there is a kind of dynamic that takes over in negotiations when they are underway, but whether that dynamic is more helpful or more hurtful varies in different circumstances. I think that it would be useful, frankly, to go back to the beginning. I think the negotiating positions which have been described, the original positions of this administration, were sound negotiating principles. They were sounder.

I have spent a good deal of time negotiating in the U.N. context, in situations where you are seeking agreement of 185 countries, or 195 countries. What happens is that one gives more and more—if one is not very alert, very determined, and frankly, ready to end without an agreement, it is absolutely essential to be aware of this in negotiations on a subject as important as this.

I think one must be prepared to end such a negotiation with no agreement—on the CTBT, for example, and I think had the administration done that, had they entered the negotiation with that determination, and clarity about their bottom-line principles—the three principles we heard described, we might not have gotten the treaty, or we might have gotten a better one. I do not think it matters much whether there is a CTBT in which 190 countries have signed on, because most of those countries are not ever going to be players in the world of nuclear weapons and nuclear war. Most of those countries really have no stake in the subject, except the stake of fallout and the pollution of the globe, that everyone has.

But they constitute a major influence in the negotiations themselves because all of the countries, or virtually all of the countries who are member States of the U.N. are also state partners in the treaty. The structure of the U.N. becomes important too, and so do the various blocs, the nonaligned bloc, for example, the G-77 take bloc positions, even though most of their members have no direct involvement in these issues of these questions, but they exercise significant influence in the negotiating process.

Senator HAGEL. Are you saying we should go back and renegotiate?

Ambassador KIRKPATRICK. I would go back and renegotiate. I would go back and renegotiate on the basis of some different principles, and one of those principles would be an understanding with

both parties that any treaty which we brought from the negotiation might not have all the members as signatories.

What would be essential would be that the nuclear powers be signatories, and maybe a few others. I am not saying only nuclear powers should be able to participate, but they should be the principal participants in any negotiation. All the countries in the U.N. really do not need to participate in such negotiations, I think you have a better chance of getting a better product if you undertake the negotiations on that basis, and in that spirit.

Senator HAGEL. Thank you. Secretary Weinberger.

Mr. WEINBERGER. Well, sir, if your goal is simply to get an agreement, then probably you would have to do what we did here, which was to give up a soundly considered, carefully crafted position, give it up easily, give every essential element of it, just so we can get an agreement. This is the syndrome that bothers me, because the agreement then becomes far more important than the context, and I think that we did have a well-considered position we went in with. If we could not get anybody to agree with it, well then, so be it, we would not get an agreement, but you would have a lot better than a bad agreement which prevents us from doing the necessary things we have to do to give the greatest assurance we possibly can that this nuclear deterrent works. Your margin for error here, Mr. Chairman, is extraordinarily small. You are not allowed to be very wrong about a guess as to whether this works or not, and that would lead me to conclude that we should have the most effective means of testing available to us.

We are not preventing other countries from testing. We are simply preventing ourselves, and if they comply themselves with having a less effective method of testing, if you really want to see, I think the most fundamental way to deal with this problem, then I think what we should do is what we should have done and what we started to do in 1983, and that is to develop an effective defense against these weapons. The knowledge that there is absolutely no defense, and that we remain committed to a treaty that forbids any effective defense, the ABM Treaty—which incidentally the Soviets started to violate within 2 weeks of the time they signed it—then you have the greatest encouragement to other countries, rogue countries, particularly, to feel that if they get this weapon and there is not going to be any defense against them, they will then be in a position to overcome their smallness, or their insignificance, otherwise in order to have the kind of military capability that will enable them to engage in nuclear blackmail.

So the best method of all to deal with this problem is to concentrate everything we have got on getting an effective defense against it, not some half-hearted attempts to satisfy a few polls or something of that kind, but a genuinely effective method of defending against these weapons.

It can be done. We finally had a test that demonstrates one method of doing it. We lost 10 years between 1993 and the present time, which we could have been working on all of these things and which we have not done. We started in 1983, we got a program in 1983, and we remained fully committed to an ABM Treaty which absolutely forbids any kind of effective defense. Defense is the answer to this kind of thing.

Senator HAGEL. My friend and colleague is up, and so if it is OK, Mr. Ambassador, I will hold my questions.

Senator BIDEN. That is OK. Go ahead.

Senator HAGEL. Senator Biden, thank you very much. Just a quick question to both Ambassador Kirkpatrick and Secretary Weinberger. The consequences of the United States defeating this treaty, as Ambassador Ledogar referenced, as we have heard an awful lot about, which I think there is some relevancy attached to that, the consequences around the world, would you give me a succinct answer? Is it real? Is it not real? Is it important if we defeat this? If we go ahead on Tuesday, what consequences will there be for the United States in the future of efforts to deal with proliferation?

Ambassador KIRKPATRICK. Senator Hagel, I truly believe that the consequences would be very much less than almost all of the extravagant statements that I have heard in the last 48 hours about what would happen if the U.S. did not ratify it.

Most countries are simply not that concerned about our policies. That is just a fact. We do not have the kind of influence over the policies and behavior of other countries that the comments are predicting, these dire consequences for U.S.-nonratification suggest.

I just think they are mistaken. They should go to the U.N. and try influencing a few countries to support votes and policies on highly worthy subjects, and you will find out very quickly how really impotent we often are in securing a large number of other countries' support, and following our example.

Senator HAGEL. Thank you. Mr. Secretary.

Mr. WEINBERGER. Well, Senator, I agree with Ambassador Kirkpatrick completely. I think that the consequences will be a certain amount of editorial hand-wringing, but nothing that is in any sense substantive. Does anybody believe, as it was said this morning, that all these constraints that now bind people will be gone? What constraints does Kim Song-il feel under, what constraints does Saddam Hussein feel under? If they can get nuclear weapons they are going to get them.

They have some. They have some of the components. They are not going to let anything like this stand in their way. The United States reaction I think would be basically, if we defeated the treaty on the grounds that have all been put forth over the course of the debate, I think the basic reaction among people who are realistic about such things would be that the United States has declined to bind itself to having an ineffective deterrent.

Senator HAGEL. Mr. Chairman, thank you.

The CHAIRMAN. Senator Biden.

Senator BIDEN. Thank you. Time is short. Maybe we will get a second round here, but I thought one of the purposes, and it may not meet, from your perspective, I say to you, Mr. Secretary, and you, Ambassador Kirkpatrick, was to not merely deal with the North Koreans, but to make sure that—or not make sure, impact on the ability of China, for example, to move to a MIRV system to be able to effectively, as you worried about, deal with what stolen data they have.

You referenced the Cox committee, Ms. Kirkpatrick, which I think is perfectly legitimate, and you indicated that one of the rea-

sons you were opposed to this treaty, among many—you named many—was that what will happen here is that, look at what the Chinese did, and you cited the Cox report.

Well, the Cox report says, and this is a quote, found that, quote, “the PRC does not likely need additional physical tests for its older thermonuclear warhead designs, but since signing the CTBT in 1996, the PRC has faced a new challenge in maintaining its modern thermonuclear warheads without physically testing,” and they go on to state that “given the limited number of nuclear tests the PRC has conducted, the PRC likely needs additional empirical information about the advanced thermonuclear weapons performance.”

And it goes on to point out that unless they can test well beyond 1 kiloton, which we are confident we can pick up, they cannot effectively use the stuff they stole, so it seems to me you are arguing against your own interest here, if you are worried about the Chinese being able to use this technology, and every one in our intelligence community suggests we are able to detect the kind of yield they would have to engage in to be able to use it.

Then one of two things happens. Either we observe, and they go ahead and they sign—by the way, the treaty does not come into force unless they sign, so unless they sign, and among others, it does not come into force no matter what we do, but if they sign, and if the only way the experts with whom I have spoken—and I, like you, I have spent hundreds of hours on this.

I have spoken to the lab directors. I have spoken to all the folks who know a lot more than all four of us, or all 15 of us, or all of us in this room about the detail of this process. They all acknowledge in order to be able to use it, they have got to be able to test it. The way they would have to test it, we can figure it out, so that leaves them in the position of either signing and then violating, in which case article 7 allows us, or safeguard 7 allows us to withdraw from the treaty, period, boom, withdraw from the treaty. We do not have to do anything else. We do not have to ask anybody, do anything.

And then on the issue of—and I am doing this because we only have 6 minutes, and I will get to specific questions in the second round if we have one.

On the issue you both raise of the inability to modernize, you point out that this would limit our ability to modernize. Well, we are—does anyone doubt that our sophistication is exponentially greater than any other country in the world in terms of our ability to make quantum leaps in modernization in the sophisticated field of strategic weapons? I know of no one who ever has made that assertion, including the three of you.

Therefore, if we are constrained from modernizing, it is overwhelmingly the case every other nation is even more constrained from modernizing.

Now, the one thing you have both educated me about in your testimony over the years is the degree to which a missile defense technology will function is in direct proportion to how sophisticated the array of offensive weapons coming in is. There is no one I have ever, ever, ever spoken to, including all the scientists out of your administration, and continuing in this administration, who has

said that we are not better prepared if we do not have multiple warhead reentry vehicles aimed at us to counter them with a missile defense.

That is one of the reasons why you did a brilliant job in START in moving along and setting in process the idea that we would no longer have multiple warheads on tops of missiles.

Now, you all are saying here, if we do not have this treaty we acknowledge the ability of the sophisticated nations to MIRV their systems increases, add a minimum increases, I would argue increases gigantically, but increases, and yet you are now saying what you should be relying on is a missile defense.

It seems to me if you want a missile defense, and a missile defense that is likely to work in the relatively near term, the fewer nations that are able to MIRV, the better off we all are.

And so my question is this. Do any of the three of you think that the ability for the nuclear States to move to MIRV'ed capacity they do not possess is harder or easier, under this treaty? Just that one question, MIRV'ed capability.

Do you think it is harder or easier, because we all know, as you know, most people do not know, to MIRV you have got to take these big old ugly things, make them lighter, make them smaller, make them more compact, make the yield of the plutonium package able to be boosted in a way as a consequence of the ignition package, as most people in here would know it, and that is a very sophisticated process that not a single scientist I have ever spoken to says can be done without nuclear testing, and nuclear testing in yields that are detectable.

And so explain to me how it makes sense, if you want a missile defense system, to be against this treaty.

Mr. WEINBERGER. Senator, that is a perfectly good argument, but it overlooks one point and that is the sophisticated knowledge which you speak of so correctly has been stolen.

Senator BIDEN. But it cannot be used if it cannot be tested.

Mr. WEINBERGER. Yes, it can be used. The new light warhead we spent years and millions of dollars has now been given to China one way or another, and they are able to use it perfectly well, so for this treaty to have any effect of banning, to have any effect on a country that wants to develop this kind of capability, the question is, it is irrelevant.

Senator BIDEN. For the record, if you could submit the name of one scientist—

The CHAIRMAN. Let us go ahead, and you take 6 more minutes.

Senator BIDEN. I just want to—if I could just followup with 10 seconds, if for the record, and not now, you can name one scientist of consequence who will tell the committee or you that they can use the stolen package without testing it, if you can submit one serious scientist who will tell me that, I would appreciate it very much, and you have time. We are probably not going to vote soon.

Mr. WEINBERGER. Your assumption is they are prevented from testing if we sign this treaty, and my assumption is that if they want to develop—if they are going to use any method they have to do it, and if we find out they have broken the treaty, Senator, we pass resolutions, we say it is a terrible thing, editorials are written, and they go right on doing what they want to do.

Senator BIDEN. So your primary concern is, we will not have the will?

Mr. WEINBERGER. The primary concern is not to give them the capability of doing that whether there is a treaty or not, and unfortunately a lot of that has already been done.

Senator BIDEN. I have great respect for you, Mr. Secretary.

Mr. WEINBERGER. I share the respect for you, but I think your argument is totally full of holes where the security of the country is concerned.

Senator BIDEN. I have not found a single scientist to take issue with what I said. If you can produce them, I would be delighted.

The CHAIRMAN. I want to be fair to everybody, including the witnesses, and Secretary Weinberger, if you wish to add anything, you go right ahead.

Mr. WEINBERGER. I am sorry.

The CHAIRMAN. I want you to have adequate time to respond to the various questions, so go right ahead.

Mr. WEINBERGER. Thank you. That was the point that I wished to make, that it is very imperative that we try to get a defense, it is very imperative that we recognize that in the world in which we live, rogue countries, countries like North Korea and Iraq and others, are certainly going to try to get every capability they can, and China, as we already know, has one way or another acquired this extremely valuable technology, and will certainly make every effort to use it, regardless of whether we do or do not sign this treaty.

The CHAIRMAN. Now, I have got something I am going to say on that, but the Senator from California has been waiting and waiting, so you proceed with your time.

Senator BOXER. Thank you so much, Mr. Chairman. I am glad to be here in this committee on a very important issue, and I think just following up on the last exchange between Senator Biden and the Honorable Caspar Weinberger, I would say that listening to Mr. Weinberger, my sense of it is he is saying, well, we sign the treaty, and then China goes ahead and does these tests, and what have we gained?

The bottom line is, if they sign the treaty and they break the treaty, we can get out of the treaty, so I think what is important for us, and it sort of gets back to what Senator Hagel was driving at, is what do we really do to make our people safer from this threat?

Now that we have won the cold war, proliferation is a very important issue. I am sure we all agree on that. But we have a disagreement on how we get to the place we want to get, where our people are safer.

Now, after reading both sides, and I have to say as I look at this, it is sort of a sad situation, it seems to me that Republicans are lining up mostly opposed—there is a few exceptions, and there is a bipartisan group who supports, and I am going to go into who those people are.

I worry about our foreign policy becoming partisan, either side, because the one thing I have noticed in all the years I have been in Congress, it has been a very long time, and I would say to my

friend Caspar Weinberger, we remember each other from the days I was on the Defense Committee over on the House side.

I always believed that military policy, foreign policy needed to be bipartisan, and we were so strong when we were, and I worry that this argument is taking another shape and form, and I am very concerned about that, because I think it weakens us, and I want to talk about what weakens us in the world. It is when we are divided, one from the other, and so I hope we can pull together at some point, however we dispose of the matter that is before us.

But as I look at the people who are for this treaty, and I read the comments of our President and our Vice President, but in addition to that, the Chairman of the Joint Chiefs of Staff, General Shelton, who says he supports it because he believes that those six important conditions strengthen us, they make us—he says it would reduce conflict and reduce tensions.

And former Joint Chief of Staff under Ronald Reagan, William Crowe, supports the treaty and says that the safeguards will strengthen U.S. intelligence, and John Shalikashvili supports it. He signed a statement that said it would strengthen our ability to verify.

Colin Powell, former chief of Staff under George Bush supports it, and he signed a very powerful statement.

Thirty-two physics Nobel laureates support it from institutions from all over this country: Princeton, Brown, University of Washington, UC-Berkeley, MIT, Illinois Institute of Technology, Cornell, Columbia, Bell Labs, Gaithersburg, Florida State, University of Texas, Harvard-Smithsonian, Ohio State—and I ask unanimous consent to put this statement that they made into the record.

Thank you so much.

The CHAIRMAN. Without objection.

[The information referred to follows:]

A LETTER FROM PHYSICS NOBEL LAUREATES

TO SENATORS OF THE 106TH CONGRESS:

We urge you to ratify the Comprehensive Test Ban Treaty.

The United States signed and ratified the Limited Test Ban Treaty in 1963. In the years since, the nation has played a leadership role in actions to reduce nuclear risks, including the Non-Proliferation Treaty extension, the ABM Treaty, STARTs I and II, and the Comprehensive Test Ban Treaty negotiations. Fully informed technical studies have concluded that continued nuclear testing is not required to retain confidence in the safety, reliability and performance of nuclear weapons in the United States' stockpile, provided science and technology programs necessary for stockpile stewardship are maintained.

The Comprehensive Test Ban Treaty is central to future efforts to halt the spread of nuclear weapons. Ratification of the Treaty will mark an important advance in uniting the world in an effort to contain and reduce the dangers of nuclear arms. It is imperative that the CTBT be ratified.

PHILIP W. ANDERSON—Princeton University—1977 Nobel Prize
 HANS A. BETHE—Cornell University—1967 Nobel Prize
 NICOLAAS BLOEMBERGEN—Harvard University—1981 Nobel Prize
 OWEN CHAMBERLAIN—UC, Berkeley—1959 Nobel Prize
 STEVEN CHU—Stanford University—1997 Nobel Prize
 LEON N. COOPER—Brown University—1972 Nobel Prize
 HANS DEHMELT—University of Washington—1989 Nobel Prize
 VAL L. FITCH—Princeton University—1980 Nobel Prize
 JEROME FRIEDMAN—MIT—1990 Nobel Prize
 DONALD A. GLASER—UC, Berkeley—1960 Nobel Prize
 SHELDON GLASHOW—Harvard University—1979 Nobel Prize

HENRY W. KENDALL—MIT—1990 Nobel Prize
 LEON M. LEDERMAN—Illinois Institute of Technology—1988 Nobel Prize
 DAVID M. LEE—Cornell University—1996 Nobel Prize
 T. D. LEE—Columbia University—1957 Nobel Prize
 DOUGLAS D. OSHEROFF—Stanford University—1996 Nobel Prize
 ARNO PENZIAS—Bell Labs—1978 Nobel Prize
 MARTIN L. PERL—Stanford University—1995 Nobel Prize
 WILLIAM PHILLIPS—Gaithersburg—1997 Nobel Prize
 NORMAN F. RAMSEY—Harvard University—1989 Nobel Prize
 ROBERT C. RICHARDSON—Cornell University—1996 Nobel Prize
 BURTON RICHTER—Stanford University—1976 Nobel Prize
 ARTHUR L. SCHAWLOW—Stanford University—1981 Nobel Prize
 J. ROBERT SCHRIEFFER—Florida State University—1972 Nobel Prize
 MEL SCHWARTZ—Columbia University—1988 Nobel Prize
 CLIFFORD G. SHULL—MIT—1994 Nobel Prize
 JOSEPH H. TAYLOR, JR.—Princeton University—1993 Nobel Prize
 DANIEL C. TSUI—Princeton University—1998 Nobel Prize
 CHARLES TOWNES—UC, Berkeley—1964 Nobel Prize
 STEVEN WEINBERG—Univ. of Texas, Austin—1979 Nobel Prize
 ROBERT W. WILSON—Harvard-Smithsonian—1978 Nobel Prize
 KENNETH G. WILSON—Ohio State University—1982 Nobel Prize

Senator BOXER. I think this is important. The labs all support it, the current people in the labs, and the other thing I am trying to search for as I look at who falls in each place, who has been really influenced by the cold war, and who is ready to get beyond it into where we are today, and I think we have to take the lessons of the cold war and be very, very wise about what we learn, but also understand that it is a new day, and we have to look at things in, therefore, I think a different way.

I want to say a comment about Ms. Kirkpatrick's statements on the President, because I support her right to her views, and she has very eloquently stated those, and she is very strong on those, but I also feel I want to put my strong views on the record when she said, and I am trying to remember exactly. The record will show. I believe she said the President is not defending the people against the most important threat of nuclear weapons, and I think that is a fairly safe repetition of what she said.

Ambassador KIRKPATRICK. No, I did not, Senator Boxer.

Senator BOXER. Well, we will go back to the record, but I would say that she said that his policies on nuclear weapons are not—because he is not doing enough on the missile defense, but we will get back to the exact words, but it was something like that, and I just want to say in the record that it was under this administration that we had the first successful test of a national missile defense, on October 2.

It is under this administration that we have the stockpile stewardship program, which we are spending \$4.5 billion. I do not think any President who did not believe we needed to retain our nuclear deterrence would spend \$4.5 billion in a time when we are so much worried about expenditures, so that started 3 years ago.

We are spending \$32 billion a year on our nuclear arsenal, and so I really just wanted to take issue with that statement, and if I am incorrect in your exact words, well, the clerk will get those words back to us.

But I worry about that, because I think every President, Republican or Democrat, goes to sleep at night and the one worry on his, and perhaps some day her mind will be the safety of the American people. I think this President is no different.

Now, we may disagree on how we get from A to B, but I guess my question to the opponents of our treaty, our distinguished panel who oppose it, what do they take issue with John Shalikashvili, what do they take issue with Colin Powell, what do they take specific issue with William Crowe, what do they take specific issue with the lab directors, what do they take specific issue with the Nobel laureates, because I think what I will do is take that critique and send it back to these fine people, who I think reflect bipartisanship in their position and want to see if they feel your points are valid and they would change their opinion on the treaty. That is my question.

The CHAIRMAN. Do you want somebody to answer it?

Ambassador KIRKPATRICK. I would like to. I would like to begin with a comment about the spirit of bipartisanship. Senator Boxer, I might say that I have testified before the Senate several times, and the House, repeatedly during these long years of President Clinton's tenure, and I have almost always done so in support of some administration policy.

I, for example, strongly supported NATO enlargement, and took a lead in the support of the administration's policies on NATO enlargement. I supported the Dayton Accords again, and took a lead in the support of the Dayton Accords, and the deployment of U.S. troops in support of the Dayton Accords. I very strongly supported the administration's decision to engage in Kosovo, and met repeatedly and testified repeatedly in the House and the Senate on that issue.

And so I would first just like to say that I have personally engaged in more bipartisan, if you will, foreign policy in the last 6 years than almost anyone I know. I cannot support the administration's policy with regard to the CTBT because I really very deeply disagree.

Let me just state what I said.

Senator BOXER. I do have it in front of me.

Ambassador KIRKPATRICK. You know what I said was, it is disturbing to me that President Clinton has, after talking about the fact that virtually everyone—and I cited the Rumsfeld and Cox Commission reports, but there are others that agreed that there has been really a serious proliferation of weapons of mass destruction and capacities, and of leakage of missiles, and missile technology, and that what I suggested was that President Clinton has not given—in the face of all of these threats, the President has not been mobilized to make the defense of the American people against these proliferating threats a top priority.

Now, why do I say that? I say that because I believe if he made it a top priority, he would have long since moved to the support of an effective missile defense, because there is really only one way to defend the American people against these proliferating threats, and it is by an effective missile defense. This treaty will not defend the American people.

Senator BOXER. Well, we just disagree on that.

The CHAIRMAN. The chair cannot tolerate a debate here. She made her statement. You challenged part of it, and I thought she was entitled to time to state what she says she really said, and I think she is right about that.

Now, I will give you another minute.

Senator BOXER. That is very sweet. I will wait until my friend finishes her statement.

Ambassador KIRKPATRICK. I have completed.

Senator BOXER. Well, I think again, what is highly disturbing to me is that obviously there are always other ways to defend a country.

Ambassador KIRKPATRICK. No, there are not.

Senator BOXER. Excuse me. There are differences in view. There are some people who do believe you can defend this country if you have this treaty. That is why the leaders of the military in this country support it, because they say in their very own words in their statements that it will, in fact, lessen the threat of war, so to say that President Clinton has not put this as a top priority simply because he does not agree with your opinion on how to protect the people, it seems to me to be a subjective statement that is unfair and I think is not good for this country, to have that kind of personal attack. That is my view.

But we disagree, and I fully respect your right to your view on that, as I am sure you respect my right to disagree with you.

The CHAIRMAN. Very well. Thank you.

Now, I have not had any time. Much has been said today, Mr. Secretary, about the Cox report, and what the Cox report has said, and what the Cox report did not say, and I think several liberties have been taken with what the Cox report did not say, but let me read what the Cox report did say, according to Christopher Cox, the chairman of the Select Committee.

He said, "the Select Committee did, however, make findings that may be relevant to the Senate's consideration of arguments that America's long history of nuclear tests obviates the need for new tests, and that preventing other Comprehensive Test Ban Treaty signatories from testing will cement America's technological advantage."

Then he goes on to say, "in fact, because of the vulnerability of U.S. nuclear test data to theft through espionage, the PRC may be able to obviate or reduce the need for its own further testing, relying instead on the American data." Now, that is what you were saying.

Now, on October 5, Robert Bell, at a press conference—and I do not know him, but he apparently is one of the spinmeisters down at the White House. He cited the Select Committee's report in support of the administration's position that the Senate should ratify the Comprehensive Test Ban Treaty.

Now, I understand also that the administration officials have cited the report in their briefings to Senate staff. Then he goes on to say, the Select Committee—that is, the Cox report—"the Select Committee made no recommendation for or against ratification of the Comprehensive Test Ban Treaty."

Now, I am running into this all the time, who said this, and everybody's for the treaty, et cetera, et cetera, and those few who are against it, well, I have got a list this long of people, great Americans who have served this country well, and I do not like the inference that there is something lacking in their patriotism.

Let me continue with the Christopher Cox letter about the Cox report. He says, thus, "the relative technological advantages the United States enjoyed by virtue of our extensive testing may be lost as a result of our adherence to the Comprehensive Test Ban Treaty regime in such circumstances." Now, if that is an endorsement of the treaty, I fail to recognize it.

Then he goes on to say, "furthermore, if the PRC has acquired U.S. nuclear weapons computer codes, it implicitly possesses the ability to evaluate the limitations of U.S. nuclear weapons systems. This information can be used to inform future PRC missile defenses. Without the ability to test, the United States will be unable to modernize its own nuclear arsenal to avert such defenses, and will be forced to rely on warhead designs whose limitations and shortcomings are well-understood by potential adversaries that may in the future not only include the PRC, but also other countries to which it may proliferate."

All right. Other findings of the Select Committee, and this is Chris Cox, the Cox report, that has been referred to here so often. He says, other findings of the Select Committee, that is, the Cox report as it is popularly known, "other findings are relevant to the question of whether the Comprehensive Test Ban Treaty is in the case of the PRC verifiable.

"The Select Committee found that the PRC has acquired classified information about nuclear testing using miniaturized fusion explosions. This inertial confinement technique would be of special usefulness to the PRC should it choose to violate the Comprehensive Test Ban Treaty."

And finally, he says the Select Committee found that "the PRC could further accelerate its nuclear development violating the Comprehensive Test Ban Treaty and testing surreptitiously."

Do you have any comment about that?

Mr. WEINBERGER. I think there is no question as to the correctness of the Cox committee's findings and conclusions with respect to that. The problem, again, we keep going back to is, our nuclear stockpile necessarily degrades, it necessarily has problems with it as it ages, as do all weapons systems. Individual components can be picked out, they can take them apart, they can find one that is apparently visibly not in the kind of condition it should be. It is replaced. Whether that replacement part is going to work with the rest or not, we will not know, and you have the same changes that have occurred.

There is also a great many more safety factors that can be put into nuclear warheads that we do not have in our older systems, and when they are added to the newer systems, or when they are built in, they need to be tested, too.

All of this is an extraordinarily complex process, and it consists of thousands, as I say, of moving parts, and it is not known whether many computers that are around now, and I do not think even the ones we are waiting for in 2007 and 2008, will be able to tell us whether it actually will work under these kinds of conditions.

So if we want to have a nuclear deterrent, and apparently everybody agrees we should have one, or at least most people, then we have to know that it works, and if we want to know that it works, we have to test it. We have to test it in the most effective means

possible, and this treaty denies us the right to test it in the most effective means possible.

We have stopped testing. Prior to the time we stopped testing, Dr. Barker, who served with me in the Defense Department, red-lined—that is, he took offline a number of nuclear weapons six times prior to the time we stopped testing because, he said, they were no longer reliable, and they had to be repaired. They had to be fixed as a result of the test.

Since the testing ended there have been no weapons redlined. The assumption seems to be that since we stopped testing everything is fine. Well, I cannot share that assumption. I do not think that is correct, and I do not want to take a chance.

You just are not allowed any margin for error in this business, Mr. Chairman, and this treaty gives a very large margin for error, not only to us, but to any other country that has the stockpile or hopes to acquire them, and certainly when we deny ourselves the right to defend against them, the very least we can do is to make sure that our own offensive weapons are in working order.

The CHAIRMAN. One other point, and this is a point of personal privilege. I have known Ambassador Kirkpatrick a long time. I have never, never known her to shade the truth or to be less than anything explicit in what she has said. If she is anything, she is very, very clear in what she writes and what she says and I don't mean to offend anybody, but I have got to take up for Jeane Kirkpatrick.

Senator BIDEN. Mr. Chairman, on a similar point of personal privilege, I share that judgment. I disagree with her judgment. She is straightforward, on point. I think she is wrong sometimes, but I do not doubt for a moment her integrity. I do not doubt for a moment her clarity and I do not doubt for a moment that she means what she says.

Ambassador KIRKPATRICK. Thank you, Senator Biden.

Senator BIDEN. I disagree with her. I think she is wrong.

The CHAIRMAN. Well, I do not think she is wrong.

Senator BIDEN. I know that. That is the issue.

The CHAIRMAN. Now, since I have not had any time before, I want to go one step further in a question and that would be for the Ambassador, who after all, was, I believe you were the chief negotiator for this treaty, were you not?

Now, I have heard over and over, sir, repeated claims by the administration that the CTBT before the Senate is, and I quote, "the longest sought, hardest fought prize in the history of arms control," end of quote. Now, if there is anything expansive, that declaration seems to me to fit, but that is neither here nor there. Then it goes on to say, that it has been the negotiating objective of every President since Eisenhower, they say.

Now, sir, we both know that that really is not so. Why is the administration making such inaccurate statements when not a single President before the current one ever sought a zero yielding definite duration CTBT? Can you explain it to me?

Ambassador LEDOGAR. I would like to begin by agreeing that that is pretty colorful language and easy to pick apart. I think that what the authors are trying to recall is that approaches to the question of nuclear testing, and trying to curb it and to halt it,

have gone back many, many years. And the famous statements by President Eisenhower at the end of his administration in connection with the passage of the Limited Test Ban Treaty and the Threshold Testing Treaty and so forth.

But I wonder if I could, while I have the floor, in the change of the Senators during the voting I did not get a chance to respond to Senator Hagel's question, and I would like to be very brief.

The CHAIRMAN. You certainly can, but let me finish my line because I have a commitment I have got to go to and Chuck, I am going to ask you to take the gavel when I finish here. But yes, sir, I want everybody to have his or her say. We have established now that this business about the longest sought, hardest fought prize in the history of arms control is bull. Is that right?

Ambassador LEDOGAR. That is not my word. That is not my characterization, no.

The CHAIRMAN. Well, how would you characterize it?

Ambassador LEDOGAR. Hyperbole.

The CHAIRMAN. That is a fancy way of saying "bull."

Now, the truth of the matter is that even the current administration, the Clinton administration did not initially favor a permanent zero yield test ban. You know that.

Ambassador LEDOGAR. Originally, that is true, Senator.

The CHAIRMAN. Now, I refer you to the statement that John Holum made in Geneva in 1996, just for the record. He said, among many other things, and I am quoting him precisely, "Among many other things, the treaty does not contain our original proposal for an option to withdraw from the treaty at the 10-year mark without citing reasons of supreme national interest and our proposal that the treaty's scope provide room for so-called hydronuclear experiments with very small nuclear yields."

Now, was John Holum's characterizations and comments the characterizations on your original negotiating instruction from the administrations, was he saying what you were supposed to say?

Ambassador LEDOGAR. Yes, but Mr. Chairman, as I think we all know, these negotiations take a long period of time. Things change during the course of the negotiations. Original instructions are often modified for a variety of reasons including historical, technological, financial, political developments that occur. For example, Secretary Weinberger alluded to the very successful negotiation on intermediate range nuclear forces that spanned over about a half a decade. I think he should also have pointed out that in the process many things changed, most importantly, at the expense of billions of dollars, we deployed hundreds of intermediate range nuclear weapons of our own. Also there was a change in the leadership in Moscow. And of course the zero zero thing which was considered difficult at the origin of the INF became a reality at the end of that 5 year period. Similar things happened in this negotiation.

The CHAIRMAN. I respect you, sir, and I accept what you say, but it is true the treaty proposed to the Senate is not what the Clinton administration initially supported. Is that not true?

Ambassador LEDOGAR. That is true.

The CHAIRMAN. I thank you, sir, and I thank all three of you, and I am going to turn the gavel over to the distinguished Senator

from Nebraska, and I apologize for having to leave, but I do appreciate your coming, and if you will stay further to respond to Senators who have arrived since we started this hearing.

Senator HAGEL [presiding]. Senator Kerry.

Senator KERRY. Thank you very much, Mr. Chairman. I thank the panel for taking the time to be with us and share an obviously deeply held point of view by a number of people who oppose the treaty. I find myself a little bit baffled by some of the intensity of the confidence and reliability questions, particularly given the way the treaty has been structured.

One of the benefits of my years in the Navy was that I went to nuclear chemical biological warfare school and got to learn a little bit about some of this, and wear some of the protective clothing and deal with it, and it was a fascinating, fascinating learning experience. What puzzles me about this debate is, based upon what we know about the complexity of a warhead and how to put one together, and particularly based on the experience of the United States, and if you were to ask people at Hiroshima or Nagasaki about confidence levels, even in an early model, they would be pretty blunt about the confidence level if the United States threatened to drop even an early model nuclear weapon, let alone the sophistication we have today in our manufacturing processes.

Now, I would be amazed if 10 years from now I were to ask any of you sitting at this table if we took at random 10 warheads from our many thousands and I offered you a choice, I said I am going to drop these 10 on your home town, I think each of you would say, please do not do that. Am I correct? Would you not, Madam Ambassador?

Ambassador KIRKPATRICK. Of course.

Mr. WEINBERGER. I would rather not have any.

Ambassador LEDOGAR. Of course.

Senator KERRY. And the reason is, you have a pretty good confidence level that 10 years from now one of them is going to go off, if not all 10, is that not correct?

So what are we talking about here in terms of deterrence? There is a 10-year review in this treaty. There is a series of safeguards adopted by the President and the Joint Chiefs of Staff that say that if at any time confidence and reliability is insufficient, we pull out.

Are you saying to me that in a 10-year period of time you believe the confidence level of those 3,000-plus that we might get to under START, or the many thousands more, is somehow not going to have the same confidence level that you just determined to any dictator, to anyone anywhere on the face of this planet that they want to run the risk that if we fired 100 of them, 200 of them, it is not the end of humankind as we understand it?

Mr. WEINBERGER. Some of them will work, some of them will not.

Senator KERRY. Wait a minute, do not dismiss it with some of them will work, some of them will not. What I remember learning in school 30-plus years ago was, it does not take more than the number on my two hands, to pretty much take care of business.

Mr. WEINBERGER. Well, if you do not have any defense against it.

Senator KERRY. I am game for defense, Mr. Secretary. That is a moot issue now. We are going down the road of missile defense. We

just had a very successful test, most of us have adopted the notion that we ought to have some reasonable——

Mr. WEINBERGER. I do hope so.

Senator KERRY. But let us come back to deterrence.

Mr. WEINBERGER. I think, Senator, as you point out, some of them will work, some of them will not, but your confidence in the total package does degrade over time, and that is an important element of deterrence, the entire amount are going to work and do the job.

Senator KERRY. Well, let us talk about that, too.

Mr. WEINBERGER. One thing I would like to talk about, if I might, and that is, you talk about the idea that we have the right to withdraw if our national interest is affected.

Senator KERRY. Supreme national interest is the word.

Mr. WEINBERGER. The fact of the matter is, we have that same kind of provision in the antiballistic missile treaty, and this President has announced he will never use it. This President has said, we based our entire defense on the ABM Treaty. That kind of a clause, Senator, is only useful if you have an administration that understands the importance of pulling out.

Senator KERRY. But they are very different. They are truly different. This safeguard says that if the President is informed by the Secretary of Defense and Secretary of Energy, advised by the Nuclear Weapons Council, the directors of DOE's nuclear weapons laboratories, and the Commander of the U.S. Strategic Command that a high level of confidence in the safety or reliability of a nuclear weapon type which the two Secretaries consider to be critical to our nuclear deterrent could no longer be certified, the President, in consultation with Congress, would withdraw from the CTBT under the supreme national interest.

Mr. WEINBERGER. Senator, do you have the President's response to that? Do you have his exact statement as to what he said? He said, in the event I were informed by the Secretary of Defense and Secretary of Energy and the Vice President of the Nuclear Weapons Council, the directors of the Energy Department's nuclear weapons labs, and the Commander of the U.S. Strategic Command that a high level of confidence in the safety or reliability of a nuclear weapons deterrent, which the two Secretaries consider to be critical to our nuclear deterrent, could no longer be certified, I would be prepared, in consultation with the Congress, to exercise our supreme national interest rights under the CTBT in order to conduct whatever testing might be required.

That is something far less than a commitment, and that is the kind of thing you get from this administration, if you pardon me.

Senator KERRY. It says right here that there is a requirement to consult with us.

Mr. WEINBERGER. Well, he is not part of that requirement.

Senator KERRY. On the contrary, he said he would.

Mr. WEINBERGER. He said he would be prepared to——

Senator KERRY. I do not want to get sidetracked, because this is very important. It seems to me that the President of the United States, whoever it might be, he or she, would have a remarkably hard time contravening all of the parties we have just named, as well as facts.

I mean, we are all Americans. We are all sitting here with the interests of the country's national security in mind. I cannot imagine being informed by all of them, as responsible Members of Congress, and not breaking down the walls of the White House saying, you folks better respond to this, if it is a legitimate threat.

What we are trying to do is establish sort of where we are today in this context, Mr. Secretary. I do not want some willy nilly silly treaty signed onto. I certainly do not want the interest that I wore a uniform to protect negated. I do not want that. But I fail to see—I mean, let me be more blunt about it. What is the component of a nuclear warhead that you believe would deteriorate over 10, 15 or 20 years that could not be replaced, or ascertained as to its degradation sufficiently?

Mr. WEINBERGER. It could be replaced, but will a replacement work in conjunction with the other parts?

Senator KERRY. Well, let us look at that in a practical—

Senator HAGEL. Senator Kerry, let us get to Senator Biden. We have been keeping with a 10-minute rule here, and allow everybody a chance to say something and respond, and we will come back around.

Senator KERRY. Fair enough.

Senator BIDEN. Well, let me just pick up there.

Mr. Secretary, I thought you said in your statement that at present the security stockpile is not effective. Is that what you said?

Mr. WEINBERGER. I am sorry.

Senator BIDEN. I thought you said in your original statement—please correct me if I am wrong—that at present the security stockpile safeguards are not effective.

Mr. WEINBERGER. Not as effective as they should be.

Senator BIDEN. Does that mean we should resume testing now?

Mr. WEINBERGER. I think we should reserve to ourselves the right to resume testing whenever we feel that it is essential to our national interest. To deny ourselves that right I think is against the national interest.

Senator BIDEN. What I am asking you is, do you think it is in our national interest now to resume testing?

Mr. WEINBERGER. I think I would feel more comfortable if more testing were done than has been done since 1992. I think it is significant that up to that time we had four or five occasions in which we were told that we could not use the weapons that we had in the stockpile and they should be redlined, and that since we stopped testing, there has been no similar statement made, no similar request made. That, I think, is significant.

Senator BIDEN. The explanation I got for that when I asked the lab directors was that technology has moved way on beyond when you were Secretary of Defense.

Mr. WEINBERGER. I hope it has.

Senator BIDEN. That is what they say. I would point out that what we had from 1953 there was a tri-lab study. The three laboratories studied our stockpile surveillance methods in 1996, and they reported the following: there were 830 recorded findings of defects in our nuclear stockpile from 1958 to 1993.

Less than 1 percent of these defects were found as a consequence of nuclear testing. Nuclear testing was not required. In 1 percent of the tests, which was 8.3 of them. Excuse me. That is not true. Yes, that is right. All but one of those nuclear tests involved items that were in the inventory before 1970 and are not in the inventory any more.

So this idea—and Dr. Robinson, Director of Sandia, said, what I can say is that the kinds of stockpile problems that would lead to such an erosion in our confidence seems highly unlikely during the next 5 to 10 years, and he is talking about when the computers come on.

But my question is this. The whole idea of our inability to exchange warheads, for example, that we could not exchange warheads, I hear opponents constantly say that. We have done it twice without nuclear tests. We have taken the B-61 and made it the B-61 mod 11 earth-penetrating device, a new warhead. No tests. We were able to do it. I mean, no nuclear tests.

And we also have done the same thing—well, I want to make sure I am absolutely accurate. I will not repeat what I think is the case, but I do know with regard to that single warhead we did that without any tests, and so we did change the nature and capability of a warhead in our arsenal with absolute confidence on the part of the scientists at the three laboratories to certify it without any tests.

Now, there is no question, I heard—I hear Senator Warner say, because he has given me the privilege of attending all of the Armed Services Committee hearings, and was kind enough to allow me to question as well, he has said it is irrefutable that weapons systems degrade. That is true, no question about it. It is irrefutable the older we get, our memory degrades.

Now, maybe someone 90 years old has a better memory than the average person who is 15 years old, but the person who is 90 years old had a better memory when they were 12. That is irrefutable. Irrefutable. I am still listening to your testimony. People are still listening to mine after 27 years, and I am older. My memory is not as good. Yours is not as good. That does not mean that we should discount what you say, any more than this notion—it is a matter of relative change.

And so the question I would get to, instead of these broad statements, no one that I have heard has indicated that the degradation in weapons systems that may have occurred from the time we stopped testing till now has had any impact upon our reliability, or the reliability of either the safety and/or the reliability of the weapons, meaning that they will explode when we shoot them off, and so—and by the way, the Cox Commission report, let me quote from it.

Cox himself said, quote, “the CTBT, if it were enforced, and that is the big issue, would be a means of preventing the more rapid weaponization and development of a new PLA nuclear weapons.” That was stated in the report May 25, 1999.

Now, I did not suggest and I do not imply that Mr. Cox is for this. He is a loyal Republican in this case. I would be dumbfounded if he was for this, dumbfounded if he would be for this treaty for a lot of other reasons. He may have substantive reasons of being

against it, because it cannot be verified, but not because it puts us at worse prospect of dealing with the Chinese.

A last point I will make, and my time I see is up, this notion, Madam Secretary, or Madam Ambassador, of exchange of data, you equate the IAEA with the sharing of data here. The only sharing of data here are seismic readings and emissions. I have not heard a single person suggest that any of the sharing of the information that would be required to be had here relative to someone violating the treaty has any utility for any upstart nation, like IAEA did, any utility to allow them to develop any weapons.

Now, it may help them develop their seismic capabilities, their meters to develop earthquake detection or something, but it has zero—zero. The analogy, unless I am missing something, is absolutely inappropriate.

Now, did you mean to suggest they could learn from this data, that they could learn, under page 17, section B, international monitoring system, paragraph 16 and 18, which is what we are talking about here, do you mean to suggest that they could learn from the data shared anything that could help them in developing nuclear capability? Was that your assertion?

Ambassador KIRKPATRICK. My understanding, Senator Biden, is that all member states will have access to the data from the monitoring.

Senator BIDEN. But let me explain what it says. It says, “international monitoring systems shall comprise facilities for seismological monitoring, radio nuclei monitoring, including certified laboratories, hydroacoustics monitoring, infrasound monitoring receptive means of communication, and that shall be supported by an International Data Center and a technical secretariat.” That is the monitoring. It is not monitoring of how they fly, or how they explode, or anything like that. It is if they exploded.

Ambassador KIRKPATRICK. My understanding is they would have access to the data center, and the access to the data center could, in my understanding be quite useful.

Senator BIDEN. Let me ask, if I may, and I know my time is up—

Senator HAGEL. Take one more minute, Senator.

Senator BIDEN. Since you negotiated this, assume—

Ambassador LEDOGAR. First of all, you are right, Senator, that the International Data Center has nothing but unclassified information. It is available to—all of it, which is an enormous amount, available to all State parties. Each State party may say, I only want some of it, and set up its own filtration system.

In a different part in the appendix, in the verification protocol to the treaty, there are safeguards in there that refer to what I think Ambassador Kirkpatrick might be referring to, namely that international inspectors onsite, whether or not they can or cannot profit with roving eyes and sticky gumshoes and so forth, and we have built into this treaty a series of measures that make that extremely difficult.

Senator BIDEN. That is the onsite inspection?

Ambassador LEDOGAR. That is the onsite inspection, that is right, and incidentally, onsite inspection is an essential difference between what we are trying to install here and the IAEA regime.

Senator HAGEL. Thank you. Let me roll it over onto my time, Senator Biden, if Secretary Weinberger has anything to say about this.

Mr. WEINBERGER. Well, I think it is a little late to be worried about what they might be able to see in the monitoring of a treaty that is not yet in force, when they have already got the vital data. They have got the warheads, and that is the critical point. They already have them. They have tested, proven warheads. That would have saved them at least 15 years of work on their own, the Chinese, under the Cox report, and that is the critical factor here.

I think there is a possibility, with the monitoring regime that is set up, that they might be able to learn a little bit more, but the fact of the matter is that they have already got the vital data. They have got the warhead itself.

Senator HAGEL. This afternoon, when we come back in about an hour, we are going to have, as my colleagues know, the chairman of the Senate Select Committee on Intelligence, and the ranking member as well as the chairman of the Armed Services Committee and the ranking member, and I suspect we will want to get into some of this with them.

I would just add, before I move on to a couple of questions I have, that it is my understanding that much of the data we are talking about here is previously classified data, so the current data we are not sure of, but I would hope that we will reengage this with our intelligence brethren this afternoon.

Now, not so that you feel unloved and unrecognized, Ambassador Ledogar, you still want to respond to a question that I had asked earlier, and you did not have time to do that, and if you would still like to respond, we would like very much to hear your response.

Ambassador LEDOGAR. Thank you, sir, and I recognize that I am a treaty supporter, so my answer is not precisely to your question, which was, as I recall, if you do not like this treaty, what do you propose instead.

So with that caveat, let me say that I would like to make clear my judgment that if you kill this treaty, you have killed an international treaty for as far into the future as I think we can see. It is not so that you could begin for the P-5 an alternative arrangement. You could not, with the P-5 plus the 3. That just simply would not work, and the international pressures are significant.

Now, a key question which I wish you had continued is, if this treaty is killed, and we the United States resume nuclear testing, then what? Or if the treaty is killed, and we continue the moratorium, then what? And then you get into two other important hypotheses that I wish there were time to speculate about, but that is the distinction I wanted to make, and I thank you.

Senator HAGEL. Thank you, and I am grateful for your followup. Let us stay on some of this same area. In Ambassador Kirkpatrick's testimony—I am going to read a little bit of it back just to familiarize all of us with what she said.

Quote, Ambassador Kirkpatrick said, "finally I should like to call the committee's attention to the governance of the organization which will administer it. I note all state parties are members. No state party can be excluded. It will operate on the principle of one state, one vote, with an executive council that is based on geo-

graphical representation comprising,” and so on and so on, and if you recall that exchange in her testimony, that seems to me to be a rather important element of this treaty for all the reasons that I think we all vividly understand. Would you care to comment on Ambassador Kirkpatrick’s point?

Ambassador LEDOGAR. Yes, thank you very much, I would, because first of all the United States is guaranteed a seat on the executive council. So is Russia, so is China, so is Britain, and so is France.

Now, those guarantees are not in the treaty text. Those guarantees are inside arrangements among our regional groups, informal arrangements, but nevertheless, it was made quite clear by each of the nuclear weapons states that everyone was equal except we, in our respective groups, were more equal than others, so that we have de facto permanent seats on the executive council.

Senator HAGEL. Does that work by election?

Ambassador LEDOGAR. The rotation is set, at least in the Western group. I do not know the details about how the other groups settled their arrangements. In the Western group we have agreed on a rotation out for at least the next 20 years after entry into force.

Senator HAGEL. Does that concern you?

Ambassador LEDOGAR. It certainly concerned me, to be sure, and I was under very strict instructions to be sure that in any circumstance the U.S. would always be on the executive council, and we did that.

Senator HAGEL. And by virtue of how, by what would that be the case, that we would be guaranteed a seat, if it is not written into the treaty?

Ambassador LEDOGAR. Because it is written into an informal side document just among the Western groups. I am being referred to page 131, but I do not have time to read it.

Senator HAGEL. What happens after 20 years?

Ambassador LEDOGAR. It would in essence rotate back to the beginning again, because all the countries in the groups are provided for.

Senator HAGEL. Meaning that we may not have a seat?

Ambassador LEDOGAR. No. We will always have our permanent seat.

Senator HAGEL. By virtue of the side agreement?

Ambassador LEDOGAR. By virtue of the side agreement.

Senator HAGEL. Let me ask Ambassador Kirkpatrick if she wishes to respond to any of that, because I think this is a very important part of what we are doing here, regardless of the technicality of the importance of all these issues, and they are important, but the governance of this is pretty key in my opinion.

Ambassador KIRKPATRICK. I think it is very key, which is why I mentioned it. Usually——

Senator HAGEL. Excuse me, Madam Ambassador, would you pull your microphone up just a little bit?

Ambassador KIRKPATRICK. I said, I think it is very important, which is why I mentioned it in my testimony. I think too often these issues get ignored. I suppose when you said the side agreement, you mean an informal side agreement, however.

Senator HAGEL. Is that correct, an informal side agreement?

Ambassador KIRKPATRICK. It is not the members of the Western group.

Ambassador LEDOGAR. That informal agreement provides for an orderly change-over for at least the next 20 years, but the treaty itself provides for a seat for—let me read it, if I may, and I am reading from page 130 of the text before you.

“At least one-third of the seats allocated to each geographical region shall be filled taking into account political and security interests by States parties that in that region are designated on the basis of the nuclear capabilities relevant to the treaty, as determined by international data, as well as all or any of the following indicative criteria in order of priority determined by each region.

“First, number of monitoring facilities of the international monitoring system, second, expertise, experience in monitoring technology, third, contribution to the annual budget of the organization.”

Now, that is a diplomatic way of saying we are more equal than others, and so are other key countries.

Senator HAGEL. Let me ask Ambassador Kirkpatrick to respond to that.

Ambassador KIRKPATRICK. Well, I would only say that it can be read that way, but it could also be read to guarantee the inclusion of major nuclear powers.

Now, I think that in the Western group we deal in confidence for the most part—I expect that that informal assurance would be honored by the Western group.

I would also add, however, that if it is—and I think it is desirable that the United States be guaranteed a seat, or effectively guaranteed a seat. I would also point out, however, that we constitute a real minority, a rather small minority of a large executive council, and it is unlikely that the decisions will be made on technical grounds.

U.N. bodies are very highly political bodies. Most people who have not functioned in the U.N. do not understand this, and I wish every one of you would spend a session at the United Nations. It does not function as almost anyone expects that it does, and it is chastening to be a minority in a body in which a large majority of whom are united by other interests. It is my recommendation to you that before you recommend another treaty to us which has such a governing body, I hope you will go spend a session at the United Nations, in the General Assembly.

Senator BIDEN. A point of clarification. The Western group gets 10 seats, and one-third of them get to sit on this executive committee? There is 10 seats on the council?

Ambassador LEDOGAR. No, there are 51 seats.

Ambassador KIRKPATRICK. The executive committee.

Senator BIDEN. There is 10 seats for North America on the council, right?

Ambassador KIRKPATRICK. No, North America and Western Europe.

Senator BIDEN. Well, if by that time, if there is 10 seats and we do not get one, there is room for Britain and France, the other two nuclear powers, then something has really gone wrong, and we will

be out of this treaty anyway. If that has gotten to the point where with 10 seats the United States does not get one on the council, I find that—I mean, if you all envision a world like that, I am with you, man, let us bomb them now. Let us not wait.

Ambassador KIRKPATRICK. People in the United Nations, Senator Biden, become irritated with the United States from time to time, and they exclude us from important bodies, as we were excluded from the Budget Committee for the last 2 or 3 years. We were never excluded from an important committee while I was there, I would like to say.

Senator HAGEL. Let me exercise the prerogative of the chair, because I know you all have to leave. You have been here for 2½ hours, which we are grateful for two yes or no questions. Any other side agreements we do not know about?

Ambassador LEDOGAR. Considering the formal word “agreement,” I would have to say there are no other side agreements. There are memoranda. There are, including some classified documents, memoranda of understandings and letters that have been exchanged. They are summarized in the material that has been put before you in unclassified fashion, particularly page 4 and page 5 of the article by article, about the scope explanation.

Senator HAGEL. So—

Ambassador LEDOGAR. The answer is no, there is no agreement that you do not have before you.

Senator HAGEL. Are side agreements binding in this treaty?

Ambassador LEDOGAR. Well, they are very strong, but they do not have the force of international law.

Senator HAGEL. But they are not binding.

Gentlemen, ladies, thank you. I am sorry to do this. I know our colleagues have more questions and time, but I know at least two of you have to be out of here by 1. You have been here for 2½ hours. The committee stands in recess until 2 p.m.

[Whereupon, at 1 p.m., the committee adjourned, to reconvene at 2 p.m., the same day.]

FINAL REVIEW OF THE COMPREHENSIVE NUCLEAR TEST BAN TREATY (Treaty Doc. 105-28)

THURSDAY, OCTOBER 7, 1999

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

AFTERNOON SESSION

The committee met, pursuant to notice, at 2:45 p.m. in room SD-419, Dirksen Senate Office Building, Hon. Jesse Helms (chairman of the committee) presiding.

Present: Senators Helms, Hagel, Smith, Grams, Brownback, Ashcroft, Frist, Biden, Kerry, Feingold, and Boxer.

The CHAIRMAN. The committee will come to order. The Foreign Relations Committee now resumes its final hearing on the Comprehensive Test Ban Treaty. And what an array of colleagues we have there, Mr. Biden.

Senator BIDEN. Mr. Chairman, that would scare any adversary away.

The CHAIRMAN. I do not know what the protocol is, but first we are going to hear from the distinguished chairman of the Senate Armed Services Committee, Senator Warner, who will report on the 3-days of extensive CTBT hearings the committee held this week, and he is joined by the distinguished ranking member of the Armed Services Committee, Carl Levin.

And then we will hear from the chairman of the Senate Intelligence Committee, Senator Shelby, who will report on his committee's findings on this treaty, and from the vice chairman of that committee, Senator Bob Kerrey. And on our second panel we will hear from Secretary of State Madeleine Albright, who is in my office next door and I will wave to her, and she is coming to hear you herself.

And finally, we will hear from several distinguished arms control experts, former ACDA director Ron Lehman, chairman of the Nevada Alliance for Defense, Energy and Business, Mr. Troy Wade, and Dr. Richard Garwin, senior fellow for Science and Technology at the Council on Foreign Relations, and in the interest of time, I'm going to forego any further comments. Senator Biden.

Senator BIDEN. Mr. Chairman, I would forego my opening statement until our colleagues have finished, but I would like to before the Secretary speaks to make an opening statement.

The CHAIRMAN. You bet. You bet. Senator Warner.

**STATEMENT OF HON. JOHN WARNER, U.S. SENATOR FROM
VIRGINIA**

Senator WARNER. Mr. Chairman, Senator Biden, colleagues, I think this is a very wise opportunity for this group to provide for this committee and for the public our individual views and those views relating to what do we do now with regards to the procedural situation confronting the U.S. Senate, a situation that was not of your making, Mr. Chairman, or mine or others.

Mr. Chairman, first I have for some 30 years been involved in national security issues beginning in 1969 when I went to the Department of Defense and now 21 years on the Senate side in the Armed Services Committee, and the subject of this category of weapons, the nuclear weapons, has been foremost in my work these many, many years. I have looked at this treaty, I have studied this treaty, and to the extent I could force my mind open, I have carefully evaluated superb testimony that the Armed Services Committee has received in the past 3 days.

I would vote today against this treaty. I would not recommend that this President or, indeed, the successor President start testing. And mind you, Mr. Chairman, given that the tests in Pakistan and India occurred, the law which precluded testing is now vitiated. That is a small footnote.

But, Mr. Chairman, the key to this thing is as follows: We have had witnesses on both sides of every issue, conscientious persons, persons who have dedicated 10, 15, 20 years of their life to providing America with a strong nuclear deterrent. They honestly differ. I say to you, Mr. Chairman, and members of this committee, there are honest differences on both sides leaving clearly a reasonable doubt, and I come from the old school that it should be beyond any reasonable doubt if we are going to take a step that affects our vital security interests for decades to come, indeed possibly into perpetuity as it relates to this cadre of weapons.

The United States today possesses the strongest conventional force. Russia's conventional force is dwindling. The NATO countries are cutting back. Indeed, our allies, Great Britain and France, are cutting back on conventional forces. The nuclear arsenals are taking on, particularly in Russia, a greater and greater significance with regard to their military and strategic planning.

And at that very time we cannot take any step, most particularly this treaty in its present form, that would weaken that deterrent. It is that deterrent, Mr. Chairman, that prevented any confrontation of a significant nature on the continent of Europe for 50 years. We celebrated here in the Nation's capital just months ago the 50th anniversary of NATO, NATO not having been involved in a major conflict for those 50 years, and now, of course, we have had the Bosnian conflict situation in Kosovo. But it was that nuclear deterrent that held at bay the Soviet Union, and now this treaty puts that in jeopardy.

The witnesses that have come before our committee, the ones that had the most difficult time, I believe, were the uniformed witnesses because they want to do what they can to support their Commander in Chief, but they gave us their best professional advice. Others who have retired likewise submitted statements.

But, Mr. Chairman, the key to every single uniformed person today supporting this treaty is the safeguard provision which says you can pull out 5, 10, 15 years hence if the President cannot certify that that stockpile is credible and safe.

Now, Mr. Chairman, our committee under my guidance and that of my colleague stayed very clearly to our jurisdiction, the military implications. But I hope you will develop, particularly with the Secretary of State, the question that needs to be answered—what happens if we pull out of that treaty 5 or 10 years hence, what happens to those nations that placed in us full faith and credit as we went ahead—that will not happen, but anyway if we went ahead and ratified this treaty, what happens to those nations? We leave them out there hanging naked 10 or 15 years from now. Naked in the sense that they have not taken such steps as they may wish to develop a nuclear deterrent, but more importantly, by taking that action and pulling out, we have to signal to the world that we have less than full faith and credit in the effectiveness of our nuclear stockpile as a deterrent and for safety.

Let me touch on safety a minute. I have seen these weapons. I have actually gone up and touched them, just out of curiosity, and I asked General Shelton the following question: In his career, had he handled them, and he said of course he had, all of them.

And I said, put yourself in the uniform of a young sailor, an airman or marine today that has to deal with storing the weapons, that has to deal with bringing them out from time to time and putting them in the various launch platforms, be it submarines, airplanes or whatever the case may be. And you cannot say to that sailor, that airman, that marine that it is absolutely safe for you to deal with those weapons. And there are many civilians that likewise have to work with them, and these weapons are stored and collocated in various places in America, and indeed, Mr. Chairman, beyond our shores. What do you say to nations as they are following this that are providing the host facilities for storage that there could be a point in time when we do not have the degree of confidence in the safety of these weapons?

Mr. Chairman, I hope and I have had the privilege of working with my good friend Senator Levin, Senator Biden, some others just as colleagues do, we have all been here two decades or more, to see whether or not there is not—and I know the Chair has spoken to this—is not a means by which we can bring reasonable and open and rational minds together to work what is in the best interests of not only our Nation, but indeed the world, and at this time not to bring to finality by vote a decision on this treaty. I hope that that is done, but if the committee is interested at some point, I would be glad to give you the benefit of one Senator's view as to how it can be done, but I would be presumptuous at this point in time.

I think I should yield to my other colleagues. I have covered the principal points. I may have a point or two after I listen to them. I thank the Chair.

The CHAIRMAN. Very good. Senator Shelby.

**STATEMENT OF HON. RICHARD C. SHELBY, U.S. SENATOR
FROM ALABAMA**

Senator SHELBY. Thank you, Mr. Chairman, Senator Biden, colleagues. It is a privilege for me to appear before this committee at this time to present my views as the chairman of the Senate Select Committee on Intelligence. I am and I want to be very specific here. I am speaking in my capacity as chairman of the Intelligence Committee, but I should make it clear that I am not, Mr. Chairman, speaking for the entire committee. I think that is important.

Due to the limited time available, the Intelligence Committee has not, Mr. Chairman, prepared a full committee report on the capability of the United States to monitor compliance with the CTBT. Furthermore, members of the committee have differing opinions on this issue.

Mr. Chairman, I intend at the proper time to vote against the resolution on ratification. I will do so for a number of reasons, but primarily because it is my considered judgment as chairman of the Intelligence Committee based upon a review of the intelligence analysis and on testimony this week from the intelligence community's senior arms control analysts that it is impossible to monitor compliance with this treaty with the confidence that the Senate should demand before providing its advice and consent for ratification.

Mr. Chairman, simply put, at this point I am not confident that we can now or can in the foreseeable future detect any and all nuclear explosions prohibited under the treaty. While I have a greater degree of confidence in our ability to monitor higher yield explosions in known test sites, I have markedly less confidence in our capabilities to monitor lower yield and/or evasively conducted tests, including, Mr. Chairman, tests that may enable states to develop new nuclear weapons or improve existing weapons.

At this point I should point out that while the proponents of the treaty have argued that it will prevent nuclear proliferation, the fact is that some of the countries of most concern to us—North Korea, Iran, and Iraq—can develop, Mr. Chairman, as you know, and deploy nuclear weapons without any nuclear tests whatsoever.

With respect to monitoring, in July 1997, the intelligence community issued a national intelligence estimate entitled "Monitoring the Comprehensive Test Ban Treaty Over the Next 10 Years." While I cannot go into the classified details here this afternoon, I can say that the NIE was not encouraging about our ability to monitor compliance with the treaty or about the likely utility of the treaty in preventing countries like North Korea, Iran, and Iraq from developing and fielding nuclear weapons. The NIE identified numerous challenges, difficulties, and credible evasion scenarios that affect the intelligence community's confidence in its ability to monitor compliance.

Mr. Chairman, because the details are classified and because of the inherent difficulty of summarizing a very highly technical analysis covering a number of different countries and a multitude of variables, I recommend that members, including the members of this committee, review this document with the following caution: Based on testimony before the committee this week, I believe that newly acquired information requires reevaluation of the 1997 esti-

mates, assumptions, and underlying analysis on certain key issues. The revised assumptions and analysis appear certain to lead to even more pessimistic conclusions.

While the intelligence community has not yet provided the committee with a written analysis of those issues, the transcript from Tuesday's hearings in the Senate Intelligence Committee is available to Members. Many proponents of the treaty place their faith, Mr. Chairman, in monitoring aids provided under the treaty such as the international monitoring system, IMS, a multinational seismic detection system, and the CTBT's onsite inspection regime, OSI. Based on a review of the structures, likely capabilities, and procedures of these international mechanisms, Mr. Chairman, neither of which will be ready to function for a number of years, and based on the intelligence community's own analysis and statement, I am concerned that these organizations will be of at best limited if not marginal value. I believe that the IMS will be technically inadequate. For example, Mr. Chairman, it was not designed to detect evasively conducted tests which, if you are Iraq or North Korea, are precisely the kind you are going to conduct. It was designed, as you know, Mr. Chairman, with diplomatic sensitivities rather than effective monitoring in mind, and it will be 8 to 10 years before the system is complete.

Because of these factors and for other technical reasons, I am afraid that the IMS is more likely to muddy the waters by injecting questionable data into what will inevitably be highly charged political debates over possible noncompliance. As a result, the value of more accurate, independently obtained U.S. information will be undermined, making it more difficult for the U.S. to make a case for noncompliance if it were to become necessary.

And with respect to OSI, I believe that the onsite inspection regime invites delay and confusion. For example, while U.S. negotiators originally sought an automatic green light for onsite inspections as a result of the opposition of the People's Republic of China, now, the regime that was adopted allows inspections, as you know, Mr. Chairman, only with the approval of 30 of the 51 countries on the executive committee. Members of the committee will appreciate the difficulty of rounding up the votes for such a supermajority.

Mr. Chairman, I am also deeply troubled by the fact that the inspected party has a veto, a veto over including U.S. inspectors on an inspection team and the right of the inspected party to declare areas up to 50 kilometers off limits to inspection. I understand these provisions are mere limitations sought by Saddam Hussein on the UNSCOM inspectors, which leads me to believe that some of the OSI standards could be what is cut out for Iraq.

As a result of these and other hurdles, Mr. Chairman, even if inspectors do eventually get near the scene of a suspicious event, the evidence, which is highly perishable, may well have vanished.

One final but critical matter that raises questions both as to Russian intentions under the CTBT as to our monitoring capabilities is the recently reported activity at Russia's Arctic test site. The Washington Post, as all of you know, last weekend reported that Russia continues to conduct possible low-yield nuclear tests at its Arctic test site reportedly in order to develop a low-yield weapon,

new low-yield weapon that will be the linchpin of a new Russian military doctrine.

The Washington Post also reported that the CIA cannot monitor such tests with enough precision to determine whether they are nuclear or conventional explosions. Such activities, Mr. Chairman, will be of particular concern because there is evidence, including public statements from the Russian First Deputy Minister of Atomic Energy that Russia intends to continue to conduct low-yield hydronuclear tests and does not believe that these constitute nuclear tests prohibited by the treaty.

Mr. Chairman, with your indulgence, I have tried to convey some very serious concerns with the practicality of this treaty and that is extremely difficult to do in an unclassified forum such as this in a short time.

I urge my colleagues as they consider their position on this treaty that they immerse themselves in the details because it is in the details where the fatal flaws of the document lie. For further information on this, I urge Members to review the transcript of this week's Senate Intelligence Committee, and we will have it available in a secure place. Mr. Chairman, thank you for your indulgence.

[The prepared statement of Senator Shelby follows:]

PREPARED STATEMENT OF SENATOR RICHARD C. SHELBY

Mr. Chairman, Senator Biden: It is a privilege to appear before you as Chairman of the Senate Select Committee on Intelligence to present my views on the Comprehensive Test Ban Treaty.

I am speaking in my capacity as Chairman of the Intelligence Committee, but I should make it clear that I am not speaking for the entire Committee. Due to the limited time available, the Committee has not prepared a full Committee report on the capability of the United States to monitor compliance with the CTBT. Furthermore, Members of the Committee have differing opinions on this issue.

I intend to vote against the Resolution of Ratification. I will do so for a number of reasons, but primarily because it is my considered judgment as Chairman of the Intelligence Committee, based on a review of the intelligence analysis and on testimony this week from the Intelligence Community's senior arms control analysts, that it is impossible to monitor compliance with this Treaty with the confidence that the Senate should demand before providing its advice and consent to ratification.

I shall leave it to another day to elaborate on my concern that the Treaty may be a stalking horse for de-nuclearization. Its operative sentence, after all, on its face bans any nuclear explosion. This prohibition raises a question about the viability of any nuclear deterrent. There may be an explanation. But it is not in the Treaty text.

Simply put, I am not confident that we can now, or in the foreseeable future, detect any and all nuclear explosions prohibited under the Treaty.

While I have a greater degree of confidence in our ability to monitor higher-yield explosions in known test sites, I have markedly less confidence in our capabilities to monitor lower-yield and/or evasively conducted tests, including tests that may enable states to develop new nuclear weapons, or improve existing weapons.

I should also point out that while proponents of the Treaty have argued that it will prevent nuclear proliferation, the fact is that some of the countries of most concern—for example, North Korea, Iran, and Iraq—can develop and deploy nuclear weapons without any nuclear tests at all.

With respect to monitoring, in July 1997, the Intelligence Community issued a National Intelligence Estimate entitled "Monitoring the Comprehensive Test Ban Treaty Over the Next 10 Years."

While I cannot go into classified details, I can say that the NIE was not encouraging about our ability to monitor compliance with the Treaty or about the likely utility of the Treaty in preventing countries like North Korea, Iran, and Iraq from developing and fielding nuclear weapons.

The NIE identified numerous challenges, difficulties, and credible evasion scenarios that affect the Intelligence Community's confidence in its ability to monitor compliance.

Because the details are classified, and because of the inherent difficulty of summarizing a highly technical analysis covering a number of different countries and a multitude of variables, I recommend that Members review this document, with the following caution:

Based on testimony before the Committee this week, I believe that newly acquired information requires a re-evaluation of the 1997 Estimate's assumptions and underlying analysis on certain key issues.

These revised assumptions and analysis appear certain to lead, to even more pessimistic conclusions. While the Intelligence Community has not yet provided the Committee with a written analysis of those issues, the transcript from Tuesday's hearing is available to Members.

Many proponents of the Treaty place their faith in monitoring aids provided under the Treaty: the International Monitoring System (IMS), a multinational seismic detection system, and the CTBT's On-site Inspection regime (OSI).

Based on a review of the structure, likely capabilities, and procedures of these international mechanisms—neither of which will be ready to function for a number of years—and based on the Intelligence Community's own analysis and statement, I am concerned that these organizations will be of, at best, limited or marginal value.

I believe that the IMS will be technically inadequate. For example, it was not designed to detect "evasively" conducted tests, which, if you are Iraq or North Korea, are precisely the kind you are going to conduct.

- It was designed with diplomatic sensitivities rather than effective monitoring in mind; and
- It will be eight to 10 years before the system is complete.

Because of these factors and for other technical reasons, I am afraid that the IMS is more likely to muddy the waters by injecting questionable data into what will inevitably be highly charged political debates over possible noncompliance.

As a result, the value of more accurate, independently-obtained U.S. information, would be undermined, making it more difficult for the United States to make a case for non-compliance if it were to become necessary.

With respect to OSI, I believe that the Onsite Inspection regime invites delay and obfuscation. For example, while U.S. negotiators originally sought an "automatic green light" for on-site inspections, as a result of the opposition of the People's Republic of China, the regime that was adopted allows inspections only with the approval of 30 of the 51 countries on the Executive Committee. Members of the Committee will appreciate the difficulty of rounding up the votes for such a super-majority.

I am deeply troubled by the fact that if the U.S. requested an inspection, no U.S. inspectors could participate in the inspection, and we could send an observer only if the Inspected Party approved.

I am also disturbed by the right of the inspected party to declare areas up to fifty kilometers off-limits to inspection.

I understand that these provisions mirror limitations sought by Saddam Hussein on UNSCOM inspectors, which leads me to believe that OSI stands for "Option Selected by Iraq."

As a result of these and other hurdles, even if inspectors do eventually get near the scene of a suspicious event, the evidence—which is highly perishable—may well have vanished.

One final, but critical, matter that raises questions both as to Russian intentions under CTBT and as to our monitoring capabilities is the recently-reported activity at Russia's Arctic test site.

The Washington Post last weekend reported that Russia continues to conduct possible low-yield nuclear tests at its Arctic test site, reportedly in order to develop a new low-yield weapon that will be the linchpin of a new Russian military doctrine. The Washington Post also reported that the CIA cannot monitor such tests with enough precision to determine whether they are nuclear or conventional explosions.

Such activities would be of particular concern because there is evidence, including public statements from the Russian First Deputy Minister of Atomic Energy, that Russia intends to continue to conduct low-yield hydro-nuclear tests, and does not believe that these constitute nuclear tests prohibited by the Treaty.

Mr. Chairman, I have tried to convey some very serious concerns with the practicality of this Treaty and that is extremely difficult to do in an unclassified forum and in such a short time.

I urge my colleagues, as they consider their position on this Treaty that they immerse themselves in the details, because it is in the details where the fatal flaws of document lie.

For further information on this topic, I urge Members to review the transcript of this week's testimony before the Intelligence Committee.

Mr. Chairman, Senator Biden, thank you for the opportunity to testify before this distinguished committee.

The CHAIRMAN. Very good. I thank you, sir. Carl, Senator Levin.

**STATEMENT OF HON. CARL LEVIN, U.S. SENATOR FROM
MICHIGAN**

Senator LEVIN. Thank you, Mr. Chairman, and Senator Biden, and colleagues. Thank you for inviting us to testify about our own beliefs, but perhaps even more importantly, what we have heard in our hearings in our own committees.

President Eisenhower stated almost 40 years ago that the failure to achieve a nuclear test ban would, in his words, "have to be classed as the greatest disappointment of any administration, of any decade, of any time, and of any party."

The central question that we face, however, every one of us as Senators, is whether or not this treaty will make us safer or less safe; whether it will make us more secure or less secure as a Nation.

The Secretary of Defense, the Chairman of the Joint Chiefs of Staff, every member of the Joint Chiefs of Staff, our top military leadership, civilian and uniformed, support this treaty. That is the testimony that we heard. It was strong testimony. It was not testimony which was qualified by any personal reservation that they are trying to support their Commander in Chief, or that they are doing the best they can. It was their own personal view, directly stated to us, looking us in the eye because we asked them, eyeball to eyeball, do you, Chairman Shelton, do you, Secretary Cohen, support the ratification of the treaty, and they said that they do.

General Shelton, who is our current chairman, of course, of the Joint Chiefs said the following: That the test ban treaty "will help limit the development of more advanced and destructive weapons and inhibit the ability of more countries to acquire nuclear weapons. It is true," he said, "that the treaty cannot prevent proliferation or reduce current inventories. But it can restrict nuclear weapons progress and reduce the risk of proliferation."

In short, our top uniformed military leader, General Shelton, said the following: "The world will be a safer place with the treaty than without it, and it is in our national security interest to ratify the Comprehensive Test Ban Treaty."

The whole world, including nuclear weapons powers and countries that might want to become nuclear weapons powers, is going to be watching what the Senate does with this treaty. And our action will affect the willingness of other nations to refrain from future nuclear testing.

Rejection of this treaty will have a profound negative impact in the battle against proliferation of nuclear weapons. India tests, Pakistan tests, and we tell them, stop testing, you are endangering yourselves, you are endangering the world. For heaven's sake, stop your testing. If we are not willing to ratify the Comprehensive Test Ban Treaty, what standing do we have to urge India, Pakistan, or

any country to stop testing? Over 150 nations have signed this treaty, including all of our allies, by the way.

There has been reference made to the fact that our allies depend upon our nuclear deterrent, and they do and have, and that our allies who store these weapons depend upon their being safe, and they do. Our allies recommend that we support this treaty, those very same allies that depend on our deterrence and rely upon our nuclear weapons to be safe because they frequently are being stored on their land. Every one of our NATO allies, plus South Korea and Japan—over 150 nations in all—have signed this treaty.

Now, the question has been raised whether or not somebody could cheat, and this is what Secretary Cohen's statement relating to that is: "Is it possible for states to cheat on the CTBT without being detected?" And here I am quoting him. "The answer is 'yes.' We would not be able to detect every evasively conducted nuclear test and from a national security perspective, we do not need to. The U.S. will be able to detect a level of testing, the yield and number of tests by which a state could undermine the U.S. nuclear deterrent."

So although you cannot be certain that nobody can conduct a test with a very small yield, what Secretary Cohen is telling us and has told us is that any militarily significant test can be detected, that they cannot gain military advantage over us by cheating at those low levels. That is his position. That is the Joint Chiefs' position, not just my position, but their position. It also happens to be mine, but that is obviously not as important.

In addition, both Secretary Cohen and General Shelton have pointed out that this treaty, if it comes into effect, will increase our ability to observe and monitor tests because it will create an international monitoring system of 320 monitoring stations in 90 countries.

They also have testified to us that they have looked at the full range of intelligence information, including the up-to-date current information which has been referred to by our good friends who have already testified. So that both Secretary Cohen and General Shelton have looked at the same intelligence information that they have referred to in their testimony and that we have looked at, and they have reached the exact same conclusion that they reached before, namely that this treaty is in our national interest and can be adequately effectively verified, although you cannot perfectly verify a low-yield test.

Finally, we had the Department of Energy's nuclear weapons lab directors in front of us today. The lab directors say that with two things they are, quote, "onboard." Now, that's the term that they used this morning. Their testimony varied. It was not one statement for three directors. And there was a variation between their testimony. But when I asked them, point-blank, are you onboard under two conditions, their answer was yes, that they are onboard with the treaty. One is that the safeguards, all six, be incorporated formally in the resolution of ratification, and second that there be robust funding of our stockpile stewardship program by the Congress. Those are critically important conditions to them and, as our good friend Senator Warner said, it is important also to General Shelton and to Secretary Cohen.

I believe the defeat of this treaty would be disastrous to our effort to reduce proliferation, but let me just close with one suggestion. There are many of us who have not yet either reached a conclusion or feel that we have enough of a record to reach a conclusion. There are many of us that feel this is the wrong time to vote on ratification for many different reasons. Some of us because there is that national intelligence estimate which Senator Shelby or Senator Warner made reference to. In fact, I think the chairman made reference to it, an ongoing national intelligence estimate.

There are many reasons that our colleagues, at least many of our colleagues, think it is best not to vote at this time on this treaty. There is precedent for a delay in voting on the treaty. There was a vote scheduled on the Chemical Weapons Convention when our good friend Bob Dole came out against the treaty, just as the current leading Republican candidate for President has come out against this treaty. And what we did as a Senate was that we delayed the vote on the Chemical Weapons Treaty in order to try to keep it out of politics to the extent we possibly could. We delayed that vote until after the Presidential election. And then we took the time to add some reservations and add some conditions to the resolution of ratification. We took that deliberative time to do that.

We cannot do that under this unanimous consent agreement. This unanimous consent agreement binds us to one amendment by the majority leader and one amendment by the Democratic leader. That is it. No reservations, conditions, declarations, statements, understandings, motions, things that you folks on this committee are experts at.

Mr. Chairman, Senator Biden, others on this committee, over the years you have lent your efforts to adding reservations, conditions, qualifications to treaties, and you have improved treaties in the process. We cannot do that under the current unanimous-consent agreement under which we are operating. We are restricted. That inhibits the deliberative process of this body. It is not in keeping with what the Senate should be and historically has been, which is a body that deliberates carefully on treaties, and then lends or doesn't lend its advice and consent to those treaties.

So I would hope that, for many reasons, we would consider delaying the vote on this treaty next week. I think that significant progress has been made through these hearings, but for many of us there is much more information that is needed, and I think for all of us from an institutional point of view, it would set a very bad precedent not to be able to offer reservations and other qualifications and amendments to a treaty that is being considered by the U.S. Senate.

I have taken a bit too long, and I again thank our Chair and Senator Biden. Thank you.

The CHAIRMAN. Thank you. Senator Kerrey.

STATEMENT OF HON. ROBERT KERREY, U.S. SENATOR FROM NEBRASKA

Senator KERREY. Mr. Chairman, Senator Biden, members of the Senate Foreign Relations Committee, I thank you for your invitation to testify and discuss the issues of verification and monitoring on the Comprehensive Test Ban Treaty.

As Senator Shelby, the chairman of the Senate Select Committee on Intelligence has just testified, under normal circumstances our committee would call witnesses, collect data, and then submit a very detailed report to the Senate on this matter. However, given the condensed nature of the debate, like the chairman, I also regret that we have only had opportunity to hold a single 2 hour hearing and that the committee has not prepared a full report.

I come before this committee in my capacity as vice chairman of the committee and as Senator Shelby as well has said earlier, I speak for myself, and have not polled Democratic members of the committee to determine their views.

The key phrase that I make in declaring that my estimate is that we can effectively monitor and verify compliance of the Comprehensive Test Ban Treaty is the phrase effectively monitor and verify. This declaration, Mr. Chairman, is made instead of an absolute declaration of verification. I believe, I say with great respect to members of this committee, that absolute verification is an unattainable standard, though it is a standard some have applied to establish as a benchmark for ratification, no treaty from the Convention on Literary and Artistic Copyrights to the International Covenant on Civil and Political Rights to the one that we are considering today, the CTBT, is absolutely verifiable.

The central question, I believe, should be, using existing assets, can the United States of America effectively monitor and verify this treaty, and my answer is, yes. This conclusion, Mr. Chairman, and members of the committee, is supported by testimony that was offered yesterday by General John Gordon, the Deputy Director of Central Intelligence. It is also based on briefings that we have received on the topics, this committee has received over the years, and most importantly, Mr. Chairman, it is based upon an assessment of our current capability to monitor as well as our plans to modernize and improve our capability to do MASINT and to collect the data needed to monitor anything that we are concerned about in this world. We are the world's best at monitoring what is going on in the world. And if the United States of America says that we cannot effectively verify, I would suggest it will be difficult for any nation to reach the conclusion that they can effectively verify this treaty or any modification of this treaty.

Mr. Chairman, I have heard some argument on last Sunday's Washington Post article on which it was reported that the CIA found that the data from the seismic sensors and other sources were insufficient to confirm the source of recent seismic activity in the Russian Arctic region of Novaya Zemlya, that this is reason enough to oppose this treaty.

Mr. Chairman, again, there are not nor will there ever be enough seismic sensors in the world to catch a country that is cheating at the margins. The important fact is this: We do have the capability today and we will continue in the future to catch any country whose activity would threaten our ability to defend U.S. national security interests. We are today not only highly capable, we are the most capable nation at the detection of nuclear detonations. The United States has today the capability to detect any test that could threaten our nuclear deterrence. The type of test that could be con-

ducted without our knowledge could only be marginally useful and would not cause a shift in the existing strategic nuclear balance.

In addition, Mr. Chairman, the United States has the capability to detect the level of testing that would be required for another country to develop and weaponize and advance thermonuclear warheads. These are existing national capabilities. These key capabilities will continue without Senate action on the CTBT, but with Senate action and the action of 16 other named nuclear nations, we will be able to increase our detection assets.

Our ability to monitor the treaty will be enhanced by access to the more than 300 monitoring stations that will make up the CTBT's international monitoring system, and the CTBT requirement for installation of 17 monitoring stations in the Middle East, Lebanon, and China, 31 in Russia will improve our ability to verify this treaty.

Mr. Chairman, in the coming decades our intelligence agencies are going to be increasingly tasked with monitoring global nuclear testing. The creation of additional tools and resources that will come as a result of the CTBT will not decrease the safety of the American people. It will increase security.

We also discussed, Mr. Chairman, two additional ways in which I believe the CTBT will enhance U.S. national security. First, a fully implemented CTBT will all but halt the ability of threshold states from establishing an effective and reliable strategic nuclear force. The inability of nations like Iran and North Korea to conduct nuclear tests will make it much less likely for them to become nuclear powers, and our ability to go to the United Nations Security Council to obtain multilateral resolutions of sanctions will minimize the go-it-alone U.S. efforts we are far too often forced to use.

Along the same lines, the inability of existing nuclear states to conduct further nuclear tests will impede if not cease their efforts to make technological advances and yields in miniaturization, advances already achieved by the United States.

As my friend and our former colleague, Senator Jim Exon said after returning from the Nevada Test Site, "No American general would trade our nuclear forces for another nation's. Given the overwhelming capability of the United States, I recognize the test ban would clearly be in our national interest."

Bluntly speaking, Mr. Chairman, we have the most effective and deadly nuclear force in the world. Therefore, to maintain our existing edge, it is in our interests to ratify the CTBT and to halt the nuclear development advancement of other nations.

To conclude, Mr. Chairman, the greatest threat to the safety of the American people is the nuclear legacy of the cold war. To confront this threat we need to employ a wide array of tools. We need to work with Russia to achieve further reductions in our nuclear arsenals, we need to fund the cooperative threat reduction program which assists the Russians with eliminating their nuclear weapons, we need a strong intelligence capability, we need to continue to pursue national missile defense, we need to maintain a rigorous military and the will to use it when our national interests are threatened, and finally, Mr. Chairman, we need the Comprehensive Test Ban Treaty.

The CTBT alone, however, will not protect the American people, but used in conjunction with these other resources, it will help check the proliferation of nuclear weapons, improve our national capabilities to detect global nuclear activity and enhance the United States' national security.

Again, I thank the chairman and I thank the chairman of the Foreign Relations Committee for inviting me to testify.

Senator WARNER. Mr. Chairman, could I just add a fact? My distinguished colleague quoted extensively from Secretary Cohen and General Shelton. I would like—I would like to have the opportunity to provide as a part of my statement the statements by six Secretaries of Defense, former, led by Secretary Schlesinger, who presented strong points that we should take into consideration as well as Dr. Kissinger by letters. The chairman talked about the intelligence which we cannot discuss here factually, but it will be before all Senators in S-407 as a part of your record and our record.

[The information referred to follows:]

The Honorable TRENT LOTT
Majority Leader,
United States Senate,
Washington, DC.

The Honorable TOM DASCHLE
Democratic Leader,
United States Senate,
Washington, DC.

DEAR SENATORS LOTT AND DASCHLE:

As the Senate weighs whether to approve the Comprehensive Test Ban Treaty (CTBT), we believe Senators will be obliged to focus on one dominant, inescapable result were it to be ratified: over the decades ahead, confidence in the reliability of our nuclear weapons stockpile would inevitably decline, thereby reducing the credibility of America's nuclear deterrent. Unlike previous efforts at a CTBT, this Treaty is intended to be of unlimited duration, and though "nuclear weapon test explosion" is undefined in the Treaty, by America's unilateral declaration the accord is "zero-yield," meaning that all nuclear tests, even of the lowest yield, are permanently prohibited.

The nuclear weapons in our nation's arsenal are sophisticated devices, whose thousands of components must function together with split-second timing and scant margin for error. A nuclear weapon contains radioactive material, which in itself decays, and also changes the properties of other materials within the weapon. Over time, the components of our weapons corrode and deteriorate, and we lack experience predicting the effects of such aging on the safety and reliability of the weapons. The shelf life of U.S. nuclear weapons was expected to be some 20 years. In the past, the constant process of replacement and testing of new designs gave some assurance that weapons in the arsenal would be both new and reliable. But under the CTBT, we would be vulnerable to the effects of aging because we could not test "fixes" of problems with existing warheads.

Remanufacturing components of existing weapons that have deteriorated also poses significant problems. Manufacturers go out of business, materials and production processes change, certain chemicals previously used in production are now forbidden under new environmental regulations, and so on. It is a certainty that new processes and materials—untested—will be used. Even more important, ultimately the nuclear "pits" will need to be replaced—and we will not be able to test those replacements. The upshot is that new defects may be introduced into the stockpile through remanufacture, and without testing we can never be certain that these replacement components will work as their predecessors did.

Another implication of a CTBT of unlimited duration is that over time we would gradually lose our pool of knowledgeable people with experience in nuclear weapons design and testing. Consider what would occur if the United States halted nuclear testing for 30 years. We would then be dependent on the judgement of personnel with no personal experience either in designing or testing nuclear weapons. In place of a learning curve, we would experience an extended unlearning curve.

Furthermore, major gaps exist in our scientific understanding of nuclear explosives. As President Bush noted in a report to Congress in January 1993, "Of all U.S. nuclear weapons designs fielded since 1958, approximately one-third have required nuclear testing to resolve problems arising after deployment." We were discovering defects in our arsenal up until the moment when the current moratorium on U.S. testing was imposed in 1992. While we have uncovered similar defects since 1992, which in the past would have led to testing, in the absence of testing, we are not able to test whether the "fixes" indeed work.

Indeed, the history of maintaining complex military hardware without testing demonstrates the pitfalls of such an approach. Prior to World War II, the Navy's torpedoes had not been adequately tested because of insufficient funds. It took nearly two years of war before we fully solved the problems that caused our torpedoes to routinely pass harmlessly under the target or to fail to explode on contact. For example, at the Battle of Midway, the U.S. launched 47 torpedo aircraft, without damaging a single Japanese ship. If not for our dive bombers, the U.S. would have lost the crucial naval battle of the Pacific war.

The Department of Energy has structured a program of experiments and computer simulations called the Stockpile Stewardship Program, that it hopes will allow our weapons to be maintained without testing. This program, which will not be mature for at least 10 years, will improve our scientific understanding of nuclear weapons and would likely mitigate the decline in our confidence in the safety and reliability of our arsenal. We will never know whether we should trust Stockpile Stewardship if we cannot conduct nuclear tests to calibrate the unproven new techniques. Mitigation is, of course, not the same as prevention. Over the decades, the erosion of confidence inevitably would be substantial.

The decline in confidence in our nuclear deterrent is particularly troublesome in light of the unique geopolitical role of the United States. The U.S. has a far-reaching foreign policy agenda and our forces are stationed around the globe. In addition, we have pledged to hold a nuclear umbrella over our NATO allies and Japan. Though we have abandoned chemical and biological weapons, we have threatened to retaliate with nuclear weapons to such an attack. In the Gulf War, such a threat was apparently sufficient to deter Iraq from using chemical weapons against American troops.

We also do not believe the CTBT will do much to prevent the spread of nuclear weapons. The motivation of rogue nations like North Korea and Iraq to acquire nuclear weapons will not be affected by whether the U.S. tests. Similarly, the possession of nuclear weapons by nations like India, Pakistan, and Israel depends on the security environment in their region, not by whether or not the U.S. tests. If confidence in the U.S. nuclear deterrent were to decline, countries that have relied on our protection could well feel compelled to seek nuclear capabilities of their own. Thus, ironically, the CTBT might cause additional nations to seek nuclear weapons.

Finally, it is impossible to verify a ban that extends to very low yields. The likelihood of cheating is high. "Trust but verify" should remain our guide. Tests with yields below 1 kiloton can both go undetected and be militarily useful to the testing state. Furthermore, a significantly larger explosion can go undetected—or be mistaken for a conventional explosion used for mining or an earthquake—if the test is "decoupled." Decoupling involves conducting the test in a large underground cavity and has been shown to dampen an explosion's seismic signature by a factor of up to 70. The U.S. demonstrated this capability in 1966 in two tests conducted in salt domes at Chilton, Mississippi.

We believe that these considerations render a permanent, zero-yield Comprehensive Test Ban Treaty incompatible with the Nation's international commitments and vital security interests and believe it does not deserve the Senate's advice and consent. Accordingly, we respectfully urge you and your colleagues to preserve the right of this nation to conduct nuclear tests necessary to the future viability of our nuclear deterrent by rejecting approval of the present CTBT.

Respectfully,

JAMES R. SCHLESINGER.
FRANK C. CARLUCCI.
DONALD H. RUMSFELD
RICHARD B. CHENEY.
CASPAR W. WEINBERGER.
MELVIN R. LAIRD.

HENRY A. KISSINGER,
October 13, 1999.

The Honorable JESSE HELMS
*Chairman, Foreign Relations Committee,
 United States Senate,
 Washington, DC.*

DEAR MR. CHAIRMAN:

As you know, I—together with former National Security Adviser Brent Scowcroft and former CIA Director and Deputy Secretary of Defense John Deutch—had recommended in a letter dated October 5th to Senators Lott and Daschle and in an op-ed in the October 6th *Washington Post* that a vote on ratification of the Comprehensive Nuclear Test Ban Treaty be postponed to permit a further discussion and clarification of the issues now too controversial. This having proved unachievable, I am obliged to state my position.

As a former Secretary of State, I find the prospect that a major treaty might fail to be ratified extremely painful. But the subject of this treaty concerns the future security of the United States and involves risks that make it impossible for me to recommend voting for the treaty as it now stands.

My concerns are as follows.

Importance of Nuclear Weapons

For the entire postwar period, the American nuclear arsenal has been America's ultimate shield and that of our allies. Though we no longer face the same massive threat that we did during the Cold War, new dangers have arisen. Our nuclear arsenal is our principal deterrent to the possible use of biological and chemical warfare against America, our military, and our allies.

Verification

Almost all experts agree that nuclear tests below some yield threshold remain unverifiable and that this threshold can be raised by technical means. It seems to me highly dangerous to leave such a vacuum regarding a matter fundamentally affecting the security of the United States. And the fact that this treaty is of indefinite duration compounds the problem. The CIA's concerns about recent ambiguous activities by Russia, as reported in the media, illustrate difficulties that will only be compounded by the passage of time.

Supporters of the treaty argue that, because of their small yield, these tests cannot be significant and that the treaty would therefore "lock in" our advantages vis-a-vis other nuclear powers and aspirants. I do not know how they can be so sure of this in an age of rapidly exploding technology and whether, on the contrary, this may not work to the advantage of nations seeking to close this gap. After all, victory in the Cold War was achieved in part because we kept increasing, and not freezing, our technological edge.

Nuclear Stockpile

I am not a technical expert on such issues as proof testing, aging of nuclear material, and reworking existing warheads. But I find it impossible to ignore the concern about the treaty expressed by six former Secretaries of Defense and several former CIA Directors and National Security Advisers. I am aware that experts from the weapons laboratories have argued that there are ingenious ways to mitigate these concerns. On the other hand, there is a difference between the opinion of experts from laboratories and policy-makers' confidence in the reliability of these weapons as our existing stockpile ages. When national security is involved, one should not proceed in the face of such doubts.

Sanctions

Another fundamental problem is the weakness of the enforcement mechanism. In theory, we have a right to abrogate the treaty when the "supreme national survival" is involved. But this option is more theoretical than practical. In a bilateral treaty, the reluctance to resort to abrogation is powerful enough; in a multilateral treaty of indefinite duration, this reluctance would be even more acute. It is not clear how we would respond to a set of violations by an individual country or, indeed, what response would be meaningful or whether, say, an Iranian test could be said to threaten the supreme national survival.

Non-proliferation

I am not persuaded that the proposed treaty would inhibit nuclear proliferation. Restraint by the major powers has never been a significant factor in the decisions of other nuclear aspirants, which are driven by local rivalries, and security needs.

Nor is the behavior of rogue states such as Iraq, Iran, or North Korea likely to be affected by this treaty. They either will not sign or, if they sign, will cheat. And countries relying on our nuclear umbrella might be induced by declining confidence in our arsenal—and the general impression of denuclearization—to accelerate their own efforts.

For all these reasons, I cannot recommend a vote for a comprehensive test ban of unlimited duration.

I hope this is helpful.

Sincerely,

HENRY A. KISSINGER.

Senator WARNER. The key thing, Mr. Chairman, is that on their own initiative the intelligence community decided they had to update this NIE as it regards to detecting illegal tests on their own initiative. They informed our committee they would not be finished with that until early next year. That concerns me greatly, and every Senator should examine to the extent they have conducted that investigation what they have found.

Last, we are substituting 50 years of proven capability of testing with actual tests underground by and large, certainly in the last two decades, for a system which is barely on the blueprint design boards, and it is going to take in the testimony of the lab directors today anywhere of from 10 to 20 years to put in place that computer, largely computer system to give this great Nation of ours the confidence to some degree in the credibility of the system and the safety of the system.

Also, much has been said about monitoring. I hope this committee looks in very carefully to the fine print of this treaty which says that 30 nations must concur in the right of this Nation of ours or another nation to go and do an onsite inspection, and that group of 30 nations could consist of voting members like Iraq, Iran or you name them.

Now, Mr. Chairman, we have just finished an operation in Kosovo where with 19 other nations bonded together by a protocol treaty called NATO had some difficulties among themselves dealing with the operation that proved to be completed here after 74 days. What is the chance that 30 disparate nations in what period of time are going to agree on an onsite inspection?

Last, this treaty, Mr. Chairman, is designed to prevent this Nation of ours to modernize. It does not stop other nations from doing whatever they wish if they do not want to be a part of it, and in no way does this treaty lay a finger on terrorists or rogue nations that want to gain access and use these weapons in an antithetical way to the interests of our security and our allies.

Senator BIDEN. But, Senator, is it not true that there is no treaty if these other nations do not sign it?

Senator WARNER. Beg pardon?

Senator BIDEN. Is it not true there is no treaty if these other nations which have nuclear capacity do not sign?

Senator WARNER. That is all part of the ratification I think is your point—

Senator BIDEN. Yeah, right.

The CHAIRMAN. Senator Shelby.

Senator SHELBY. Mr. Chairman, I want to associate myself with the remarks of the distinguished chairman of the Armed Services Committee, Senator Warner. He said it well. But I would ask again

that every member of this committee and the Senate come to S-407 in their time and look at some classified information that I believe that you owe it to yourself before you vote.

Senator KERREY. Mr. Chairman, if I could disassociate myself with the comments made by both my friends, first of all, as to the Central Intelligence Agency and other agencies producing a new NIE, there is no definitive end date here. We are constantly evaluating our capacity to monitor and the risk to the United States of America, so no one should presume, well, we have the definitive, final, end-of-the-game report that is going to come due next year. This is a constant process.

Again, I underscore for emphasis, nobody on the face of the Earth is better at monitoring risk to the Nation and the people in that nation than the United States of America. We have the best monitoring capability of anybody right now, and the central question is not can I monitor something bad that is going on out there, but can I monitor something that will shift the strategic balance and put us at risk.

If it does not shift the strategic balance and put at risk, it is not something that should cause us, it seems to me, to fly off and say that the Nation is imperiled.

Senator LEVIN. May I just have one moment. Thank you, Mr. Chairman. First we currently have a safe and secure nuclear stockpile without testing, and we have not tested for about 7 years. The program, the stockpile stewardship program which we are relying on is not 10 or 20 years off. It is being utilized right now to certify to every one of us that our weapons stockpile is safe and secure. Those lab directors, when asked point-blank by me whether or not, while this stockpile stewardship program is being enhanced, whether or not they can give us that stockpile certification if given the resources by this Congress, and if those other safeguards are in place, their answer is they believe they can. And if they cannot certify, they will not, and under the specific safeguards provisions that the President has proposed and that we would adopt, we are giving notice to everybody in advance that we would consider it our supreme national interest to resume testing if needed, if those lab directors and the Secretaries of Defense and Energy cannot give us a certification that our inventory is safe and reliable. So this is not like some rinky-dink system that is far off. We are investing billions of dollars each year and have for many years. We rely on the stockpile stewardship program right now. There have been three certifications under that system. And it is a fact that it would take 30 of 50 nations in order that we could have inspection, that is true.

Most of those nations, thank God, are not like Iraq and Iran. Most of those nations are our allies, and just because a few of those 50 nations might be some we could not rely on, when you go down that list, you will see that the vast majority of those nations are nations that we would rely on, and do rely on every day as allies, and have an abhorrence and a fear of nuclear weapons that is such that they would be highly supportive of an inspection in order to see whether somebody had cheated on this treaty.

Senator SHELBY. Mr. Chairman, I hope we will all do the right thing, but I trust that we will be careful in what we do.

The CHAIRMAN. So do I. John, do you have a comment or a question?

Senator KERRY. I have a bunch.

The CHAIRMAN. All right.

Senator BIDEN. Go ahead, John, but I have a couple for my friends.

The CHAIRMAN. We gave him short shrift this morning.

Senator KERRY. Mr. Chairman, thank you very much, sir. Let me just, if I can begin, I really find this debate somewhat extraordinary to some degree because there are reasonable people who are thinking about their nation. I personally would really hope we do not have a vote, and I have expressed that to the chairman of the Armed Services Committee and to the leadership, and that is not because I am trying to save the Republican Party from itself. That is because in my judgment, it would deal us a really enormous long-term injury for a lot of different reasons that I do not have time to lay out now, but in the debate we may.

But, you know, it is extraordinary to me to hear some of these arguments. Thanks to you, when you were Secretary of the Navy, I got to go to nuclear chemical biological warfare school, and I learned then you can drop these weapons, and they do not go off. I learned about one point detonation, I learned about some of the mechanical and electrical safety measures that are involved, and I know and you know as former Secretary of the Navy and as chairman of the committee that the notion that somehow Americans are unsafe with a weapon that is sitting there, some component of which may deteriorate is simply extraordinarily inaccurate and, in fact, scary to people in a way that it should not be.

Senator WARNER. I do not wish to scare them, but I respectfully disagree.

Senator KERRY. The fact is that every electrical and mechanical component can be inspected and replaced. In point of fact, if that were our fear, we could rebuild each warhead. In fact, we have rebuilt. We have the B-61 that was changed in 1988 and certified without any nuclear test. Safety is not dependent on a nuclear explosion. Safety is dependent on the safety mechanisms working, and all of them can be tested without a nuclear explosion.

So no one should say to the American people that deterioration over the years somehow puts them at risk for a matter of safety.

Now, second, I asked the question earlier this morning of Ambassador Kirkpatrick and Secretary Weinberger, and they answered it, I thought, correctly and honestly. And the chairman was not here. We have 6,000 or so warheads today we hope under START II to get them down to 3,500. We hope if we ever get to START III we will get them down to 2,225. If you were offered the option 10 years from now or 20 years from now with our current safety mechanisms and verification capacities to take 20, 30 of those warheads out of our entire arsenal and we offered you the option of dropping them on North Carolina or Virginia, I guarantee you you would say please do not do that because you know as well as I do the better percentage of them are going to go off, if not all of them.

Now, deterrence is built on a perception of threat. It is built on somebody's supposition that something might happen. That was the entire mutual assured destruction theory that took us through

50 years successfully, and to suggest that in a mere 15 or 20 years with the current level of inspection, the current level of computerization, the current level of technological capacity of this country, the odds on 100 or 500 or a thousand of those multiple thousands not being able to explode and provide deterrence is extraordinary. Why, otherwise, I ask the chairman would Japan and all these other countries that depend on us for their deterrent umbrella, why would they be the signatories and why would they be saying please, United States of America, sign this? Have they lost their senses about their own national security? No. I believe they are tuned in to the reality of deterrence in a way I do not completely understand. I know this, that if you do not have this verification process in place and monitoring of the other systems, you guarantee that every nation in the world is in a free-for-all, but if you have it, you have the best opportunity of all to try to create a regimen, a protocol under which we rein in what we have fought for 50 years to rein in. It is incomprehensible to me that people would want to reject that.

The CHAIRMAN. All right, who wants to answer that?

Senator WARNER. Quickly, I respectfully disagree with your hypothesis. I think time could take its toll and could affect safety.

Senator KERRY. Even if you replace them every 5 years?

Senator WARNER. Senator, we have dismantled so much of our infrastructure to do exactly what you speak of. There is only one nation now building new weapons, and that is Russia, a new tactical weapon, and we have got to be cautious about that.

And second, with all due respect to my distinguished ranking member, I have to tell you that the stockpile is safe today and tomorrow and for the foreseeable future predicated on test data that was done in the past 50-plus years by actual test.

The system coming on line, the SSP, as we call it, is heavily dependent on computers and unequivocally in our testimony in response to my questions and others', that system will not be up and fully ready for 5 to 20 years, depending on the lab director you ask. So I think that is imperative that the Senate understand that.

Senator KERRY. The only response I make, Mr. Chairman, in fairness is, under the safeguards that I believe any President would wisely adopt, you can pull out of this treaty.

Senator WARNER. And what is the consequences to the world when you do that?

Senator KERRY. It is better to have been in it and gone down the process because the only reason you would pull out is because it is falling apart, because you cannot safeguard your future, and that is why you would make that decision. The consequences of that are no different from the consequences that you are proposing we adopt today.

The CHAIRMAN. Please, please. Our staff is already fussing at me. Of course, I am enjoying this, but we have got Madeleine Albright, and whereas I would like to hear you folks, I would rather hear her.

[Pause.]

The CHAIRMAN. Senator Biden has an opening statement, and then we will hear from the distinguished Secretary of State. Welcome.

Secretary ALBRIGHT. Thank you very much, Mr. Chairman.

Senator BIDEN. Welcome, Madam Secretary. At the outset, I want to thank you, Mr. Chairman, for convening this hearing. It has been over 2 years since the President submitted this Comprehensive Nuclear Test Ban Treaty, and since that date it has not gotten the attention it should, but I welcome today's hearing. I think it is better than us not having done it, but I am not sure it is what we should have done.

I believe very strongly, Mr. Chairman, the Comprehensive Test Ban Treaty is manifestly in the security interests of the United States, and I believe that the Senate should give its advice and consent. As the chairman will recall, we have met from the time he has been chairman on a regular basis, and he always asks me what my priorities are, and he will recall I have indicated to him consistently the single most important thing I think this committee can do is attend to this treaty.

Ratification of the test ban treaty is in our national security interests because the treaty is going to help reduce the ability of nations to join the nuclear club or to field sophisticated nuclear weapons they do not now have.

Madam Secretary and Mr. Chairman, no treaty is perfect. No treaty can guarantee perfect security, but the example of the Nuclear Nonproliferation Treaty is illustrative. Three decades ago when the NPT was signed it was commonly believed that dozens of nations would soon possess nuclear weapons. Today there are just seven nations that acknowledge having the weapons and one or two more that may have constructed a nuclear device. Undeniably the nuclear test ban treaty, the Nuclear Nonproliferation Treaty in my view has been successful in containing proliferation. We always hear how it has failed. Remember, before it was signed, everyone was talking about a couple dozen nations having the capacity, the nuclear capacity. Similarly, the Comprehensive Test Ban Treaty, I believe, will constrain nuclear proliferation because it will be difficult for countries who have never tested to be sure that the weapons they have tested will work and for those who have tested to make any significant change in their arsenal.

The United States having conducted over 1,000 tests in five decades or about one every 2 weeks has an extensive data base of knowledge and breathtaking stockpile stewardship program to ensure the reliability of our nuclear stockpile without further testing. I would note parenthetically here that I have spoken at length with the two gentlemen who designed the stockpile stewardship program. I have listened to all the directors of the laboratories including former lab directors, and I do not hear anybody, anybody, anybody, anybody, anybody saying what is implied, and that is that our stewardship stockpile program now has put our stockpile in jeopardy or there is any reasonable prospect of that happening anytime in the future.

Additionally, the CTBT will make it harder for other nations who have not conducted many tests to modernize their nuclear arsenals. For the last two decades—excuse me, for the last 2 years extensive investigations have focused on whether the People's Republic of China may have stolen key secrets from U.S. nuclear weapons laboratories. Such espionage, of course, is a matter of grave concern.

But I challenge everyone to consider this: China can make far more progress in modernizing its nuclear arsenal by testing than it can from a mere analysis of whether the nuclear secrets they have stolen from us can be used.

If we fail to certify or ratify the CTBT, China will be free to stay out of the treaty, and it may feel free to resume testing. The result would be that China, with a far more advanced arsenal than it possesses today, could obtain—would have a far more advanced arsenal than it possesses today than it could possibly obtain under the treaty.

The Comprehensive Test Ban Treaty is in our interests because it can contain the advances of nuclear arms in South Asia as well. Seventeen months ago India and Pakistan each conducted a series of nuclear tests. Aggressive diplomacy on the part of the administration has so far prevented these countries from testing further or deploying those devices on ballistic missiles. They will probably join the treaty and have indicated that they will do so, but our failure to join I predict would result in a destructive and costly nuclear arms race in which the people of both those nations and indeed the world will be losers. The CTBT is in our interests because it will enhance our ability to determine if other nations have tested by establishing a global network of monitoring stations, well over 300 stations, in fact, many of which complement our own vast monitoring capabilities now.

The treaty requires installation or upgrades of dozens of stations in key areas of interest to us, including 31 stations in Russia, 11 in China, 17 in the Middle East. These are obviously not places where we can just go and set up shop, so they will make a considerable contribution to overall monitoring.

Finally, Mr. Chairman, the CTBT is in our interest because it will cap the nuclear programs of the existing nuclear powers, thus giving our military planners greater certainty about the arsenals of possible adversaries. There is much more to say, and over the coming days we will debate many of the fine points of this treaty. These points are important, and the reason why we should conduct several hearings to review this treaty, several more than we have had, but I urge everyone to stay focused on the central question, will we be better off in a world without nuclear testing than we will be in one with nuclear testing?

We have not tested a nuclear device since 1992. We have established a 10-year \$45 billion program to ensure that we do not need to test again. No other nation with nuclear weapons can match this. We have the financial resources, the existing nuclear know-how, the scientific community second to none, and a strong bipartisan commitment to nuclear deterrence, and no rogue state can develop a nuclear weapon without conducting tests that will almost certainly be detected and will prompt a swift and strong international reaction. I think that is a decidedly one-sided deal in our favor.

The world is watching the Senate. Will we choose to enhance our security and increase stability with a treaty that will constrain or will we allow the expansion of nuclear capability and destroy a 40-year foundation that has been underway of moving away from the use of nuclear weapons, a reduction in the nuclear weapons and

arms control or will we set out on a path of proliferation? It is almost that simple and it is that complicated, Mr. Chairman.

I thank you again for having this hearing. I hope that better heads prevail and we are able to continue this process, but if we have to vote on Tuesday, which I am prepared to do, and will vote for the treaty, it will be the single most important vote anybody on this committee will cast and will have cast in my view, and it will set the path for this Nation and determine the circumstances under which my granddaughters will live more than any other thing that we do. I welcome you, Madam Secretary, and thank you, Mr. Chairman, for allowing me to make an opening statement.

The CHAIRMAN. Well, you are certainly welcome. We have a decision to make, this being a very active Senate these days. I see the one light, meaning a vote is on. I dislike Senators going and coming while the Secretary is speaking. Would you prefer that we all go and come back quickly? I think I would rather.

Secretary ALBRIGHT. Yes, thank you.

The CHAIRMAN. We will stand in recess and go vote and then come right back.

[Recess.]

Senator HAGEL. Madame Secretary, if you are prepared, I have been empowered by the chairman, scary thought as that is, to welcome you officially and get you started. We know you have other things to do. And we are again grateful for you being here. We look forward to your testimony. So tally ho.

Senator BIDEN. Mr. Chairman, I am ready to vote.

Senator HAGEL. I was not given that much power.

STATEMENT OF HON. MADELEINE K. ALBRIGHT, SECRETARY OF STATE

Secretary ALBRIGHT. Thank you very much, Senator Hagel, and other Senators. I really thank you for the opportunity to testify today on behalf of a treaty that will make the world safer and America more secure. The Comprehensive Test Ban Treaty or CTBT is not a panacea. It will not guarantee that nuclear weapons spread no further. No pact or policy can ensure that. But the treaty will make it more difficult and dangerous for countries to develop and modernize nuclear weapons. That is, without question, in the national security interests of the United States.

Under the treaty, America would retain a safe and reliable nuclear deterrent, but by preventing testing, the treaty will inhibit the development of more advanced weapons by other nuclear weapons states and make it harder for countries that do not now have such weapons to build them.

Our Nation has the world's most advanced nuclear capabilities. In the past we conducted more than 1,000 nuclear explosive tests. Our most experienced and eminent nuclear scientists and the heads of our testing labs agree that we do not need to continue these tests in order to maintain an effective deterrent. We can keep our weapons fully safe and reliable under the provisions of the treaty and the special safeguards President Clinton has proposed. This view is echoed by our senior military leaders, including General Hugh Shelton, Chairman of the Joint Chiefs, and four of his

predecessors, and has been supported consistently by the chiefs of all our Armed Services.

America's ability to protect its security without testing is not new. We stopped conducting nuclear explosive tests in 1992. In recent years such a moratorium has been broadly observed around the world, but as the exceptions in South Asia last year indicate, restraint depends now almost entirely upon goodwill.

Since America has no need and does not plan to conduct nuclear explosive tests, the essence of the debate over the CTBT should be clear. It is not about preventing America from conducting tests. It is about preventing and dissuading others from doing so. It is about establishing the principle on a global basis that it is not smart, not safe, not right and not legal to conduct explosive tests in order to develop or modernize nuclear weapons.

By banning such tests, the treaty removes a key tool that a modernizer or a proliferator would need to develop with confidence small advanced nuclear warheads. These are the weapons that can most readily be concealed and that can be delivered by ballistic missiles. They are the most threatening to others and to us. No country could be confident of developing them under the CTBT.

Some say the treaty is too risky because countries might cheat, but by approving the treaty what exactly would we be risking? With no treaty, other countries can test without cheating and without limit. The CTBT would improve our ability to deter and detect clandestine nuclear weapons activity in three ways. First, every signatory would be required to accept intrusive monitoring. Second, the treaty establishes a comprehensive international verification regime with more than 320 data gathering stations of four different types that can register nuclear explosions anywhere in the world. A great deal of information collected by these sensor stations would not otherwise be available to our intelligence community.

Third, the treaty would give us the right to call for onsite inspections when we have evidence a test has occurred. Obviously we will continue to make full use of our own national technical means, but we will have more extensive access in more countries of interest under the treaty than we would ever have without it. And the more countries that support and participate in the treaty, the harder it will be for others to cheat and the higher the price they will pay if they do.

Mr. Chairman, some have suggested that the treaty is not verifiable because we cannot be absolutely certain of detecting very low yield tests. Strictly speaking, that is true with or without the treaty, but by improving our capacity to monitor, we are much more likely under the treaty to detect such tests and consequently to deter them.

The CTBT prohibits all explosive tests, and we would take any sign of cheating very seriously, but our citizens should know that low-yield explosions would be of little use in developing new or more advanced weapons systems, and we are confident that we would detect and deter any tests that could damage U.S. security interests.

Another criticism I have heard of the treaty is that it is premature. We should wait, some say, both until our ability to detect even the smallest test is 100 percent, which may never happen, or

until every country about which we are concerned has ratified the treaty first.

I can only reply that that is a recipe for followership, not leadership. The purpose of our national security policy should be to help shape events, not simply observe them. We want other countries, including Russia, China, India, and Pakistan to ratify this treaty and undertake a binding commitment to refrain from nuclear explosive tests.

But how can we convince them to do so if we will not? If we wait, why should not they? Waiting is not a strategy. Waiting is the absence of a strategy. If we believe nuclear restraint is the right approach, we should ratify this treaty and mark a path for others to follow. After all, we heard the same arguments during the debate on the chemical weapons convention. Opponents said we should wait, but once we decided to move ahead, five countries, including China, chose to submit their ratifications on the same day we did. Cuba ratified a week later, and Iran, Pakistan, and Russia followed within 8 months.

Over the past 2 days I have been asked whether I would prefer to see a vote on this treaty delayed rather than have it voted down. I have only one real preference, and that is to see the treaty approved as soon as possible. The reason is not sentiment but sense. This treaty would help America. I hope that Senators who now oppose the CTBT or who are undecided will think very carefully about what the consequences would be if the treaty were not approved. Because it would be a national security tragedy if the world's greatest deliberative body killed a treaty that our Nation has sought for 40 years by failing properly to deliberate on and appreciate its merits.

Under those circumstances, we would have preserved the right to do something we have no need and no intention of doing, while giving a free pass to those who may want to conduct nuclear explosive tests and could one day do us harm. We would have ignored the best national security advice of our top military leaders. We would have missed a priceless chance to improve our ability to detect and deter nuclear tests. We would have denied the vision and betrayed the dream of the two Presidents who first proposed and pursued the comprehensive test ban—Dwight Eisenhower and John Kennedy—and we would have done damage to American interests in every region.

In Asia, by throwing away a valuable tool for slowing the modernization of China's nuclear arsenal and by sending a very confusing signal to North Korea. In South Asia by cutting the legs out from under our efforts to persuade India and Pakistan to sign and ratify the CTBT. In Russia by reducing our credibility on non-proliferation issues with a government we have continually urged to take proliferation seriously. In the Gulf by easing worldwide pressure on Iran to curb its nuclear ambitions. And in Europe, the Americas, and around the globe by disappointing our allies and friends, many of whom have ratified the treaty and are without exception urging us to do the same.

Senators, in recent years I have traveled to every corner of the world. I have met with senior officials from most nations. In that time I have not heard a single expression of doubt about the over-

whelming power and reliability of our nuclear deterrent or about our ability and resolve to defend America's vital interests.

What I have heard are questions about whether America would continue to lead in reducing the threat that nuclear proliferation poses to every citizen in every country. I have heard the concern that we would insist on reserving the right to conduct nuclear explosive tests and thereby give every country with a potential to develop nuclear weapons a green light to do so.

Let us be clear. It is potential proliferators who need to test. We do not. It is those who might wish to modernize. We set the standard for modernization. By approving the CTBT, we can go far to lock in a technological status quo that protects us without threatening others.

At the same time, we would strike an historic blow against the spread of nuclear weapons. But if we send this treaty down to defeat, we will fuel ambitions and fears that could multiply the number and danger of nuclear weapons even as the new century dawns.

In recent days I have heard opponents refer to this treaty to ban nuclear explosive tests as dangerous. Call me illogical, but I believe that given where the United States now stands in the world, it is unrestrained nuclear explosive tests that are dangerous.

I know this treaty cannot eliminate all the risks that we and our families face, but like President Clinton, Secretary Cohen, American military leaders past and present, and our Nation's allies from Ottawa to Paris and London to Tokyo, I am convinced this landmark agreement will reduce those risks. I urge each Senator to think carefully before voting to put partisan considerations aside and to cast your vote in support of American leadership on behalf of a safer world and in favor of the Comprehensive Test Ban Treaty.

Twenty years from now when my grandchildren are living in a world where there are more nuclear powers, they might look at me and say, Maddy, which is what they call me, and they might say, weren't you Secretary of State in 1999 when people considered whether we should test or not? How come the testing went on? Did you not do something about it?

And I am going to say to them, I did my damndest for them to make sure that the Comprehensive Test Ban Treaty passed, and I hope that when you look at your grandchildren you will be able to say the same thing. Thank you very much.

[The prepared statement of Secretary Albright follows:]

PREPARED STATEMENT OF HON. MADELEINE K. ALBRIGHT

Mr. Chairman and Senators, thank you for the opportunity to testify today on behalf of a Treaty that will make the world safer and America more secure.

The Comprehensive Test Ban Treaty, or CTBT, is not a panacea. It will not guarantee that nuclear weapons spread no further. No pact or policy can ensure that. But the Treaty will make it more difficult and dangerous for countries to develop and modernize nuclear weapons. That is, without question, in the national security interests of the United States.

Under the Treaty, America would retain a safe and reliable nuclear deterrent. But by preventing testing, the Treaty will inhibit the development of more advanced weapons by other nuclear weapons states, and make it harder for countries that do not now have such weapons to build them.

Our nation has the world's most advanced nuclear capabilities. In the past, we conducted more than 1,000 nuclear explosive tests. Our most experienced and eminent nuclear scientists, and the heads of our testing labs, agree that we do not need

to continue these tests in order to maintain an effective deterrent. We can keep our weapons fully safe and reliable under the provisions of the Treaty and the special safeguards President Clinton has proposed.

This view is echoed by our senior military leaders, including General Hugh Shelton, Chairman of the Joint Chiefs of Staff, and four of his predecessors. And has been supported consistently by the chiefs of all our armed services.

America's ability to protect its security without testing is not new. We stopped conducting nuclear explosive tests in 1992. In recent years, such a moratorium has been broadly observed around the world, but—as the exceptions in South Asia last year indicate—restraint depends now almost entirely upon good will.

Since America has no need and does not plan to conduct nuclear explosive tests, the essence of the debate over CTBT should be clear. It is not about preventing America from conducting tests; it is about preventing and dissuading others from doing so. It is about establishing the principle on a global basis that it is not smart, not safe, not right and not legal to conduct explosive tests in order to develop or modernize nuclear weapons.

By banning such tests, the Treaty removes a key tool that a modernizer or a proliferator would need to develop with confidence small, advanced nuclear warheads. These are the weapons that can most readily be concealed; and that can be delivered by ballistic missiles. They are the most threatening to others and to us. No country could be confident of developing them under the CTBT.

Some say the Treaty is too risky because countries might cheat. But by approving the Treaty, what exactly would we be risking? With no treaty, other countries can test without cheating, and without limit.

The CTBT would improve our ability to deter and detect clandestine nuclear weapons activity in three ways.

First, every signatory would be required to accept intrusive monitoring.

Second, the Treaty establishes a comprehensive international verification regime, with more than 320 data gathering stations of four different types that can register nuclear explosions anywhere in the world. A great deal of the information collected by these sensor stations would not otherwise be available to our intelligence community.

And third, the Treaty would give us the right to call for on-site inspections when we have evidence a test has occurred.

Obviously, we will continue to make full use of our own national technical means. But we will have more extensive access in more countries of interest under the Treaty than we would ever have without it. And the more countries that support and participate in the Treaty, the harder it will be for others to cheat, and the higher the price they will pay if they do.

Mr. Chairman, some have suggested that the Treaty is not verifiable because we cannot be absolutely certain of detecting very low-yield tests. Strictly speaking, that is true with or without the Treaty. But by improving our capacity to monitor, we are much more likely under the Treaty to detect such tests and consequently to deter them.

The CTBT prohibits all explosive tests; and we would take any sign of cheating very seriously.

But our citizens should know that low-yield explosions would be of little use in developing new or more advanced weapons systems. And we are confident that we could detect and deter any tests that could damage U.S. security interests.

Another criticism I have heard of the Treaty is that it is premature. We should wait, some say, both until our ability to detect even the smallest tests is 100 percent, which may never happen; or until every country about which we are concerned has ratified the Treaty first. I can only reply that this is a recipe for followership, not leadership.

The purpose of our national security policy should be to help shape events, not simply observe them. We want other countries, including Russia, China, India and Pakistan to ratify this Treaty and undertake a binding commitment to refrain from nuclear explosive tests.

But how can we convince them to do so if we will not? If we wait, why shouldn't they? Waiting is not a strategy; waiting is the absence of a strategy. If we believe nuclear restraint is the right approach, we should ratify this Treaty and, mark a path for others to follow.

After all, we heard the same arguments during the debate on the Chemical Weapons Convention. Opponents said we should wait.

But once we decided to move ahead, five countries, including China, chose to submit their ratifications on the same day we did. Cuba ratified a week later, and Iran, Pakistan and Russia followed within eight months.

Over the past two days, I have been asked whether I would prefer to see a vote on this Treaty delayed, rather than have it voted down. I have only one preference, and that is to see the Treaty approved as soon as possible. The reason is not sentiment, but sense. This Treaty would help America.

And I hope that Senators who now oppose the CTBT, or who are undecided, will think very carefully about what the consequences would be if the Treaty were not approved. Because it would be a national security tragedy if the world's greatest deliberative body killed a Treaty that our nation has sought for forty years by failing properly to deliberate on and appreciate its merits.

Under those circumstances, we would have preserved the right to do something we have no need and no intention of doing, while giving a free pass to those who may want to conduct nuclear explosive tests and could one day do us harm.

We would have ignored the best national security advice of our top military leaders.

We would have missed a priceless chance to improve our ability to detect and deter nuclear tests.

We would have denied the vision and betrayed the dream of the two Presidents who first proposed and pursued the—comprehensive test ban—Dwight Eisenhower and John Kennedy.

And we would have done damage to American interests in every region.

In Asia, by throwing away a valuable tool for slowing the modernization of China's nuclear arsenal; and by sending a very confusing signal to North Korea.

In South Asia, by cutting the legs out from under our efforts to persuade India and Pakistan to sign and ratify the CTBT.

In Russia, by reducing our credibility on nonproliferation issues with a government we have continually urged to take proliferation seriously.

In the Gulf, by easing worldwide pressure on Iran to curb its nuclear ambitions.

And in Europe, the Americas and around the globe, by disappointing our allies and friends, many of whom have ratified the Treaty and are—without exception—urging us to do the same.

Senators, in recent years, I have traveled to every corner of the world. I have met with senior officials from most nations. In that time, I have not heard a single expression of doubt about the overwhelming power and reliability of our nuclear deterrent, or about our ability and resolve to defend America's vital interests.

What I have heard are questions about whether America would continue to lead in reducing the threat that nuclear proliferation poses to citizens in every country. I have heard the concern that we would insist on reserving the right to conduct nuclear explosive tests, and thereby give every country with the potential to develop nuclear weapons a green light to do so.

Let us be clear. It is potential proliferators who need to test; we do not. It is those who might wish to modernize; we set the standard for modernization. By approving the CTBT, we can go far to lock in a technological status quo that protects us without threatening others. At the same time, we would strike an historic blow against the spread of nuclear weapons.

But if we send this Treaty down to defeat, we will fuel ambitions and fears that could multiply the number and danger of nuclear weapons even as the new century dawns.

Mr. Chairman, it just so happens that about three weeks ago, I was blessed with my fourth grandchild, and first granddaughter. Her name is Madeleine.

I hope I am not being selfish when I say that I want Madeleine and others her age to grow up like those of us on both sides of this table in one respect could not. I want her to grow up free from the fear of nuclear attack. I believe that the CTBT will give her and her generation a better chance. I fear that without the Treaty, the spread of nuclear dangers could create risks even graver than those we faced.

In recent days, I have heard opponents refer to this Treaty to ban nuclear explosive tests as dangerous. Call me illogical, but I believe that, given where the United States now stands in the world, it is unrestrained nuclear explosive tests that are dangerous.

I know this Treaty can't eliminate all the risks that we and our families will face. But like President Clinton, Secretary Cohen, American military leaders past and present, and our nation's allies from Ottawa to Paris and London to Tokyo, I am convinced this landmark agreement will reduce those risks.

I urge each Senator to think carefully before voting, to put partisan considerations aside; and to cast your vote in support of American leadership, on behalf of a safer world, and in favor of the Comprehensive Test Ban Treaty.

Thank you.

The CHAIRMAN. Madam Secretary, I apologize for being so late, but three people grabbed me on another matter.

Before we routinely turn to our first round of questions, I feel obliged to ask you a question about a matter that was brought to the committee's attention this morning by the administration's CTBT negotiator, Ambassador Ledogar.

When asked, the ambassador confirmed the existence of a previously undisclosed side agreement relating to U.S. membership in the CTBT Executive Council. I did not even know that existed, which shows what I know. He also confirmed the existence of other side deals contained in memoranda and jointly agreed notes.

Now, I do not get hot and bothered about things of this sort, but it does concern me when I learn about secret deals on the side. Maybe they are perfectly innocent, but do you want to talk about why these exist and how they exist and how it began?

Secretary ALBRIGHT. Well, first of all, let me just say in terms of what you were asking about the creation of the Council, that is part of how this Comprehensive Test Ban Treaty is going to work, and we can give you more information on that, but let me just say that during the negotiation of the CTBT, the nuclear weapons states did consult regularly including on questions related to the scope of the treaty, and these consultations led to the achievement of a shared understanding that all nuclear explosions, however small, including low-yield hydronuclear tests, are prohibited and subcritical experiments are not prohibited.

A shared understanding was also achieved that the treaty does not prohibit a range of activities, none of which would involve nuclear explosions. I think there are no secret agreements attached to this, but whatever documentation we have we obviously will be glad to share with you.

The CHAIRMAN. That was going to be my next suggestion. If you furnished us information probably it would just go in the file and never matter, but you know how it is.

Secretary ALBRIGHT. Obviously. No, we would be pleased to.

The CHAIRMAN. Let us see. I asked the Ambassador about the White House's claim that CTBT is, quote, and this expression or this phrase has been used time and time again, "the longest sought, hardest fought prize in the history of arms control," and that it has been the negotiating objective of every President since Eisenhower. He stated that that was hyperbole and admitted that not a single President before the current one has ever sought a zero yield indefinite duration CTBT. I just wonder if that does not carry the hype a little bit far, and maybe it happens on the side I happen to be on, and it is one of the rare occasions when you and I are on opposite sides, but do we have to do that sort of thing or do you know some hyperbole? I called it bull, but he said, well, I prefer to call it hyperbole.

Do you agree with your chief negotiator that the treaty proposed to the Senate is not what the Clinton administration initially proposed?

Secretary ALBRIGHT. Well, first of all, I do not know what you want to call it, but the truth of the matter is that it was President Eisenhower who first put forward the idea that there be a ban on testing of nuclear weapons, and then President Kennedy had a lim-

ited test ban, and really it is an issue that has been out there ever since the beginning of nuclear testing because I think those Presidents and subsequent ones have been very concerned about the dangers created to everybody by nuclear testing and have tried to limit it, and I think that—so I think that—I try not to use hyperbole, but I do believe that this is a much sought after treaty that has been sought after for a long time by many, many Presidents.

It also is very much a part of an overall proliferation strategy or nonproliferation strategy. We are not the only country in the world that has nuclear weapons, and we are also a part of the Nuclear Nonproliferation Treaty, and what happened as a result of that was that, first of all, when there was the moratorium that passed in 1992, there was a push that there should also be a Comprehensive Test Ban Treaty along with a unilateral moratorium. Then when we were reviewing the NPT in 1995, we made a good faith commitment to the nonnuclear countries that we would do everything we could to work on a Comprehensive Test Ban Treaty. That has been the push.

Those negotiations have all been taking place—not bilaterally as our treaties with the Soviet Union and Russia have, but multilaterally, and in that kind of a negotiation, there is always a lot of give and take. We did not get everything that was our maximum position, but we did get everything that we needed, and I think, sir, you appear as all of you that are legislators know that as you are coming forward with something that you really want, you have an ability to negotiate down to your bottom line and get what you really need, and in the meantime clearly in the negotiating process you put down your maximum demands, and we, as I said, we did not get everything we wanted, but we got everything we needed.

The CHAIRMAN. Now, my impression is that Eisenhower and everybody else insisted on low-yield testing and a time limit for the treaty. Am I mistaken?

Secretary ALBRIGHT. Excuse me, and a time?

The CHAIRMAN. And a time limit on the treaty.

Secretary ALBRIGHT. Well, I think that what they wanted was to get what they could. Their dream was to be able to have a treaty that made sure that we were safe and that we would be able to maintain our superiority, and at the same time make sure that there would not be problems in terms of others being able to develop their nuclear weapons.

We believed, and there has been a lot of discussion about the zero yield, there were discussions about whether there should be higher levels, and ultimately after the discussions in committees, it was decided that it was better to have a zero yield rather than a low yield because it is easier, frankly, to measure, and we got agreement from the Chinese and the Russians that it was appropriate to have a zero yield in this treaty, and this treaty is permanent, but it does permit for a 10-year review.

The CHAIRMAN. Good. If I might ask Mr. Holum, he is not testifying, but he could possibly nod yea or nay if he is familiar with this statement. Among many other things, the treaty does not contain our original proposal for an option to withdraw from the treaty at the 10-year mark without citing reasons of supreme national in-

terest, and our proposal that the treaty's scope provides room for so-called hydronuclear experiments and very small nuclear yields.

Is that a statement that you are familiar with?

Secretary ALBRIGHT. Yes.

The CHAIRMAN. As a matter of fact, you made it, did you not?

Secretary ALBRIGHT. Yes.

The CHAIRMAN. I just wonder if it is a fair characterization of your original negotiating instructions from the administration.

Secretary ALBRIGHT. I can. If you want, let me give you a fuller answer here. During the initial phase of the negotiations, the United States did seek to make a small exclusion for itself to allow for very low-yield hydronuclear tests. However, others asked for exclusions also on a much larger scale which would have been contrary to our nonproliferation objectives.

In principle, we were not able to oppose others' exclusions unless we decided to move to a zero yield treaty that would be equal for all. In 1995 the report of the JASON group of distinguished scientists concluded that we did not need hydronuclear tests to maintain the safety and reliability of our nuclear stockpile which removed reservations about zero and allowed us to propose the zero as a solution, and getting others to reassess downward and eventually to accept zero was a victory for the United States. And zero, moreover, was recognized as better for us because it is easier to verify, as I said, the difference between zero and some limited level of activity than between one level of activity and a higher level. So we were pleased with that, and I think that the fact also exists as one of the aspects of the treaty as it was transmitted to you that we can withdraw, it does not matter whether 10 years or any years if the President on advice from the Department of Defense—Secretary of Defense and Secretary of Energy thinks that the reliability of the stockpile is not there or other reasons for supreme national interest. So that exists. It is not within a timeframe. It is available to us at any time that we feel our national security is threatened.

The CHAIRMAN. Thank you for that. Senator Biden.

Senator BIDEN. Thank you very much. Again, welcome, Madam Secretary. There is a lot of things I would like to explore with you here. Let me begin by saying that I, along with a number of my Republican colleagues with whom I have been asked by the Democratic leadership to confer about the scheduling of this vote, are concerned about the possible consequences of rejection. Speaking only for myself, I think the prospects for rejection are in direct proportion to how little discussion there is. My view is the greater the discussion, the greater the debate, the more time we have to discuss it, the more it will become apparent why this is so important.

I would like to ask permission, Mr. Chairman to enter in the record a list of the duration of time that we took to hold hearings and also debate on the floor of the Senate the last five major arms control treaties we have had.

The CHAIRMAN. Without objection, of course.

[The information referred to follows:]

SENATE CONSIDERATION OF MAJOR ARMS CONTROL AND SECURITY TREATIES—1972–1999

Anti-Ballistic Missile Treaty/SALT I (approved 1972)

- 8 days of Foreign Relations Committee hearings
- 18 days of Senate floor consideration

Intermediate Nuclear Forces (INF) Treaty (1988)

- 23 days of Foreign Relations Committee hearings
- 9 days of Senate floor consideration

Conventional Forces in Europe (CFE) Treaty (1991)

- 5 days of Foreign Relations Committee hearings
- 2 days of Senate floor consideration

START I Treaty (1992)

- 19 days of Foreign Relations Committee hearings
- 5 days of Senate floor consideration

START II Treaty (1996)

- 8 days of Foreign Relations Committee hearings
- 3 days of Senate floor consideration

Chemical Weapons Convention (1997)

- 14 days of Foreign Relations Committee hearings
- 3 days of floor consideration

NATO Enlargement (1998)

- 7 days of Foreign Relations Committee hearings
- 8 days of floor consideration

Comprehensive Test Ban Treaty (submitted 1997)

- 1 day of Foreign Relations Committee hearings (scheduled)

Senator BIDEN. Now, I asked Frank Wisner and Robert Oakley to advise me on the impact of a negative vote on India and Pakistan in particular. Wisner was Ambassador to Egypt under President Bush and Ambassador to India under President Clinton, and Oakley was Ambassador to Pakistan under Presidents Reagan and Bush, and their letters are short and to the point, and with your permission, Mr. Chairman, I would like to read them, and then maybe the Secretary could respond.

This is from Mr. Oakley—Ambassador Oakley:

“Dear Senator Biden, you asked my views on the effects of action by the U.S. Senate to reject the Comprehensive Test Ban Treaty. In my judgment, the effects would be dangerously negative for the United States security interests.

“First, in the long term, there would be a significant erosion of constraints upon further development of nuclear capacities and capabilities around the world. The United States has been the leader in seeking limitations upon current capabilities as well as convincing other countries not to develop such capabilities. There would be important political downside effects upon this effort since the United States would be seen as turning away from its basic policy of restraint. Second, in the near term, the climate and freedom for nuclear testing created by reversal of U.S. basic position would be an incentive for new countries such as Iran to test when they are ready. Russia and China might well conclude they have the freedom to test. The most troubling in the immediate future would be the virtual invitation to India to start implementing a new nuclear doctrine recently proposed by its national security advisory board. This doctrine calls for a major increase in India’s nuclear capabilities which could only be achieved by more testing. Pakistan has already made it clear that it would follow India in more testing, and given the prevailing tensions in the subcontinent,

the nuclear arms race which could well ensue would be extremely dangerous.”

Senator BIDEN. Signed Robert B. Oakley.

And the following from Ambassador Wisner.

“Dear Senator Biden, I understand that Members of the Senate are currently debating the issue of Comprehensive Test Ban Treaty. I regard early passing of this treaty as America’s highest national importance and hope that your arguments in support of its passing can result in the right and necessary outcome.

“As Ambassador to India from 1994 to 1997 I was intimately involved in matters related to CTBT and India’s willingness to sign the treaty. Since my departure from government, I have also followed closely the negotiations with New Delhi and Islamabad which are aimed at convincing those governments to accept CTBT. If the United States delays the decision and rejects the treaty, I am confident the United States runs a serious risk of India abandoning the treaty and Pakistan will follow suit. Consensus in favor of treaty signature in India is not yet fully formed, and if it is, the consensus will be weak. Many thoughtful Indians with a voice in national defense policy believe India needs to test further its nuclear capacity. What India does, Pakistan surely will do.

“In the event that India and Pakistan walk away from the CTBT, the United States will face an even more complicated nuclear proliferation problem, in the world at large.”

Senator BIDEN. And it goes on from there. Sincerely, “in closing, let me repeat my hope that the U.S. Senate will ratify . . .”.

That, coupled with a—well, let me just ask you to respond. Do you share their concern about the impact of a negative vote on India and Pakistan restraining or failing to restrain their move toward further reliance upon nuclear weapons?

Secretary ALBRIGHT. Well, I do not want to engage in hyperbole, but in spades I agree with what they have said because I think that we are very concerned about the possibility here that we have two countries side by side that have very serious differences and have now the potential of nuclear weapons, and we believe that the U.S. ratification remains critical in order to get them on board.

[The full text of the letters referred to follows:]

AMERICAN INTERNATIONAL GROUP, INC.,
70 PINE STREET,
New York, NY, September 30, 1999.

The Honorable JOSEPH R. BIDEN
United States Senate,
439 Dirksen Bldg., Washington, DC.

DEAR SEN. BIDEN: I understand that members of the Senate are currently debating the issue of the Comprehensive Test Ban Treaty. I regard the early passage of this Treaty as a matter of the highest national importance and hope that your arguments and support of its passage will result in the right and necessary outcome.

As Ambassador to India from 1994 through 1997, I was intimately involved in matters related to CTBT and India’s unwillingness to sign that Treaty. Since my departure from government I have also followed closely our negotiations with New Delhi and Islamabad which are aimed at convincing those two governments to accept CTBT. If the United States Senate delays a decision or rejects the Treaty, I am confident that the United States will run a serious risk of India abandoning the Treaty. Pakistan will follow suit. A consensus in favor of a Treaty signature in India is not yet fully formed and if it is, the consensus will be weak. Many thoughtful

Indians with a voice in national defense policy believe India needs to test further its nuclear capability. What India does, Pakistan will surely do.

In the event that India and Pakistan walk away from CTBT, the United States will face an even more complicated nuclear proliferation problem in the world at large. The signal will be visible to all that the Treaty has been grievously weakened and the international community is unable to control weapons testing. This state of affairs cannot be helpful to the United States and to the hopes all of us have to reduce the threat of the use of nuclear weapons in the world. Put differently, I do not wish to contemplate treaty failure here followed by a breakdown with India and Pakistan and the effect these moves will have on rogue states like Iraq, Libya, Iran and North Korea.

In closing, let me repeat my hope that the United States Senate will ratify CTBT and do so very soon.

With best wishes,
Sincerely,

FRANK G. WISNER,
Vice Chairman, External Affairs.

INSTITUTE FOR NATIONAL STRATEGIC STUDIES,
NATIONAL DEFENSE UNIVERSITY,
Washington, DC, October 1, 1999.

Senator JOSEPH R. BIDEN, JR.
*Senate Foreign Relations Committee,
United States Senate, Washington, DC.*

DEAR SENATOR BIDEN: You asked my views on the effects of action by the United States Senate to reject the Comprehensive Test Ban Treaty. In my judgement, the effects would be dangerously negative for the United States security interests.

First, in the long term, there would be a significant erosion of constraints upon the further development of nuclear capabilities around the world. The United States has been the leader in seeking limitations upon current capabilities as well as convincing other countries not to develop such capabilities. There would be an important political downside effect upon this effort since the U.S. would be seen as turning away from its basic policy of restraint. Second, in the nearer term, the climate of freedom for nuclear testing created by the reversal of the basic U.S. position would be an incentive for new countries such as Iran to test when they are ready. China and Russia might well conclude that they have freedom to test. Most troubling, in the immediate future, it would be a virtual invitation for India to start implementing the new nuclear doctrine recently proposed by its National Security Advisor Board. This doctrine calls for a major increase in Indian nuclear capabilities, which can only be achieved by more testing. Pakistan has already made clear that it would follow India in more testing. Given the prevailing tension in the sub-continent, the nuclear arms race which could well ensue would be extremely dangerous.

Sincerely,

Ambassador ROBERT B. OAKLEY (Ret.),
Distinguished Visiting Fellow.

Senator BIDEN. Let me ask you one more question before my time is up. I am sorry to interrupt you, but my time is about to expire. You have more than anyone else that I am aware of in the last—in the recent past, the last several years met with, spoken with our allies—Japan, Germany, nonnuclear powers, Britain, France, et cetera. It has been asserted by the Senator from Virginia and some others that they, if we sign this treaty, they will lose faith in our nuclear deterrence, and they, in turn, will be inclined to either upgrade their own—proliferate their own nuclear capability, that is upgrade it, and/or become nuclear powers in the case of Japan and Germany.

Would you be willing to comment on that assertion?

Secretary ALBRIGHT. Well, first of all, I believe that they are all counting on us to lead the nonproliferation fight and to make sure that they—that our deterrent is strong as a result of the fact that others cannot test. Therefore, they are counting on us to keep the

lead in nuclear nonproliferation. Otherwise they might, in fact, be put in a position where they do have to do other things to strengthen themselves. We are providing them the ability to make sure that they do not have to get into a position of strengthening.

Senator BIDEN. Have they all signed?

Secretary ALBRIGHT. Yes. Well, the ones that—France and the United Kingdom have ratified. Germany and Japan have. All NATO allies have signed and 15 have ratified.

Senator BIDEN. Thank you. My time is up. Thank you.

Senator HAGEL. John, thank you, and welcome Madam Secretary, nice to have you here, and we are grateful that you are giving us a sense of the dynamics of the importance of what we are discussing.

On a serious note but maybe a lighter side of that, I appreciated very much your comments regarding your grandchildren. A couple of weeks ago I was in Nebraska with my 6-year-old and my 8-year-old, and we were at a Dairy Queen, which is a very popular place in Nebraska. I was in the Dairy Queen, and we were buying Dilly Bars, I am not sure what flavor, but one of my many enlightened, insightful constituents began to shower me with praise on the kind of effective representation I was bringing to Nebraska, which I allowed to go on for as long as we could all stand it.

Whereupon this enlightened gentleman said, and, Senator, nice to have you back in the State, I know you always appreciate spending time with your grandchildren. I took your grandchildren issue rather seriously.

Secretary ALBRIGHT. It just goes to show you how much older I am than you are.

Senator HAGEL. No, I think it is the job. But you have really cut to the essence of what this is all about. The objective is to make the world safer for mankind, and I think we all tend to miss that occasionally when we get consumed with technical issues and details.

But with that said, I have stated, Madam Secretary, that I am undecided, and I am undecided because, Senator Biden and others have said it rather clearly, I think we need more time to understand what the consequences are, what the issues are, what the details are. With that in mind, I have worked my way along through this. I am sorry our friend Senator Kerry is not here because he had dazzled us with his technical brilliance, and he attributed that all to being in the Navy.

Well, I am just an old Army man, so I did not have the benefit of that brilliant technical background, but I do have a couple of questions on the governance of this treaty. I think when we define it down, no matter what we have, how it is governed and how we live by the conditions is pretty critical. You noted in your testimony that of the three issues that you felt were important, in your words, the CTBT would improve our ability to deter and detect clandestine nuclear weapons activity. The treaty would give us the right to call for onsite inspections when we have evidence a test has occurred.

I would very much appreciate you enlightening the committee on how that works. This morning one of your predecessors at the United Nations, Ambassador Kirkpatrick, got into this in some de-

tail, laying out the representation of the governance committee, the executive council, who gets votes. There were some, I thought, rather disturbing aspects of that as to who would we be guaranteed a seat on the executive council. That is when it came up, by Ambassador Ledogar, that in fact that was a side deal, that wasn't in the language. I would appreciate it if you could take us through that because we heard from some of the chairmen of the committees this afternoon preceding your testimony that it would take a 30-nation concurrence in order to get an onsite inspection.

Secretary ALBRIGHT. Well, first of all, let me describe a little bit how the onsite inspection would work. It is designed to permit timely and effective inspections, while guarding against abuses, and the treaty's Executive Council must vote on whether to approve a request for an onsite inspection within 96 hours from the time of request, and as stated, such decisions have to be taken by 30 of the Executive Council's 51 members, and we can bring whatever evidence we choose, including what is gathered by national technical means to the table to get the vote.

The countries that will be on this council are selected by region, and clearly there is no question in my mind that the United States would be one of the countries that would be a part of this. Now, you do have to get the vote of the other countries in order to have this happen, and we believe that they will be selected by random from regions that, given the evidence that would be brought to the table, that it would be very difficult for any country to stop onsite inspection taking place.

We also have the possibility that if we see that there has been a questionable event, is ultimately we can bring questions to the Security Council as we did, for instance, when we were concerned about what was going on in North Korea. So I do think that we have a way to get our case in a timely way to the Executive Council of the organization as it is set up. I do not have concerns about that.

Senator HAGEL. You do not? Ambassador Kirkpatrick did, and she regaled us a little bit on real life at the United Nations, which you know a little something about. So you do not think that is a concern?

Secretary ALBRIGHT. No. And I think some of the things we did was to have protection ourselves, is in terms of making sure that countries that we did not like or had problems with would not be able to have open access to our sites, and so we are able to have special procedures which would allow to us not have every aspect of our own sites inspected in every way.

Senator HAGEL. Thank you. Mr. Chairman, thank you.

The CHAIRMAN. Senator Boxer, do you not want to come up here? You are sitting down in San Diego.

Senator BOXER. It is OK. It is all right. I have a good bird's eye view of everybody, and it works just fine.

The CHAIRMAN. I recognize you.

Senator BOXER. Thank you so much, Mr. Chairman, for your courtesy and, again, for having this debate. I do agree with Senator Biden, I feel the more we debate it, the more the case is made, but then, you know, I have a prejudice in favor of it. I know a couple

of our colleagues are against it and a couple are undecided. I would like perhaps to hear from them afterwards.

But let me just put this into my perspective, as everybody does. When I was a child in grammar school and risking letting everyone know my age, although it is public information, those were the days of the real threat of a nuclear war, and in my public school, in my grammar school, we had to go underneath the desk, we had drills, and we were taught if we went underneath the desk and covered our eyes like this, we could survive a nuclear strike. We also had dog tags, like the Army, like they had in the Army. We were so proud to wear those. We felt so important. We did not realize the purpose of it was if we were annihilated, someone would know who we were.

So the kids in my generation really did not know that much. The kids in later generations after me started to realize what this was all about. When I got to the House in 1982, Congressman George Miller and his Republican allies set up—he is a Democrat. His Republican friends set up a bipartisan Select Committee on Children, Youth, and Families, and one of the first hearings we had was on the threat of nuclear war and what it was doing to our kids, and I will never forget sitting in that room listening to the young people express their fears of going to bed at night not knowing if the Soviet Union and America were going to just explode these bombs. So they really knew what was happening. And then when the cold war ended and we all thought the threat was over, it was an incredible sigh of relief I think across this land from all sides.

Now here we sit at a moment in time that I think is absolutely a turning point, and I think as we have looked at the problems of the treaty, which I think is very important that we do that, as I see it, the main problems are the verifiability and the assurance that our stockpile stewardship program is working well, and each member is going to decide for himself or herself whether they feel comfortable with it, but I think the important thing here is that any President in the future, as the Secretary of State has clearly told us, can get out of this if they feel we have taken too much of a risk with this treaty. They do not need a Senate vote, it is not going to get bogged down in some of our rules. If there is a supreme national interest, we can get out of it, and I think it is important for us to look at the risks of this treaty and then the risks of not going forward with it. And I think what Senator Biden has tried to do, if I could get his attention for a minute—Senator Biden, I think what you have tried to do, it is important because I want to ask you about something if the Chairman will allow, is talk to us about the threat of us not going forward, and he has raised some issues in certain parts of the world, and so has the Secretary of State in my home State yesterday raised those issues, particularly in the India, Pakistan region.

The reason I wanted to catch my friend's attention is I thought there was a phenomenal article. It was today in the Washington Post by someone who you know very well, George Perkovich, who worked with you for a long time.

Senator BIDEN. Yes, we do not want to ruin his reputation by letting everyone know that.

Senator BOXER. The reason I bring it up is I feel that in this very, very brief article, which I would ask unanimous consent that we may place in the record, Mr. Chairman. Mr. Chairman, may we place this in the record?

[The information referred to follows:]

[From the Washington Post, Oct. 7, 1999]

THE NEXT PRESIDENT WILL PAY THE PRICE

(By George Perkovich)

If the Senate eventually fails to ratify the Comprehensive Test Ban Treaty, there will be another victim besides the one Senate Republicans intended. For it is not only President Clinton who will be harmed by the action but the person who takes office as president—and many Republicans presume it will be one of their own—in 2001. The new president will face nuclear shock waves around the world, bereft of bipartisan support when he most needs it.

Here are some likely scenarios:

- India will probably conduct more nuclear weapons tests. India's nuclear scientists and hawkish strategists want a sophisticated arsenal, ranging from small tactical weapons to huge hydrogen bombs. They also wish to overcome doubts about the technical performance of the weapons tested in May 1998. More tests would satisfy them and their potential military "customers" that they can mimic the great powers.

Conversely, ratifying the test ban treaty would tether the nuclear hawks and allow India to concentrate on the economic route to major powerdom. India's leading statesmen, Prime Minister Atal Bihari Vajpayee and Foreign Minister Jaswant Singh, recognize this and want to avoid a costly and dangerous arms race. A Senate rejection of the test ban treaty would undermine these statesmen and badly complicate increasingly vital U.S.-Indian relations.

- Pakistan would match India test for test. This would lead to the kind of arms race that Presidents Reagan, Bush and Clinton have sought to block in the subcontinent. Lest an arms race seem inconsequential, it should be recalled that India and Pakistan just battled in Kashmir. The fighting came closer to erupting into an all-out war and possible nuclear escalation than was reported. If more testing occurs and hawks in both countries are unleashed, defense spending will increase. Pakistan will move closer to bankruptcy. This will heighten the risk of Taliban-like groups gaining power in Pakistan, metastasizing cells of intolerance, aggression and anti-American terrorism that would bedevil the next American president.

- While China has signed the test ban treaty, it will not ratify it if the United States doesn't. China assumes that rejection means Republicans want to conduct more nuclear tests; otherwise, why wouldn't they ratify? In this case, China will make preparations to resume nuclear testing, especially if India conducts more tests. China possesses only some 20 long-range, single-warhead missiles capable of striking America. This poses no serious threat to the U.S. deterrent. China has conducted some 45 nuclear explosive tests, the United States 1,030. The test ban is valuable precisely because it constrains the kind of weaponry advances that the Chinese military might otherwise wish to make with purloined American design information.

- Japan will face pressure to reconsider its nuclear abstinence if China and India build up nuclear forces. Test ban opponents in Washington argue that American ballistic missile defenses should reassure Japan that it does not need to hedge its bets. However, the Japanese, like U.S. allies in Europe, recognize the technical and strategic problems posed by inevitably less-than-perfect defenses. Indeed, Senate rejection of the test ban paired with aggressive promotion of ballistic missile defenses will prompt China and Russia to feel that the United States is bolstering its capacity for nuclear coercion and possible first use. Moscow and Beijing will augment their nuclear offenses to counter defenses. In this context, Japan (and NATO allies) will feel more rather than less threatened. The next American president could then confront a crisis in alliance relations.

- Globally, rejection of the test ban will endanger the nuclear nonproliferation regime. In 1995 the international community agreed to extend indefinitely the Nuclear Non-Proliferation Treaty on the promise that the nuclear weapon states would complete a test ban treaty by 1996. This was the minimal disarmament condition that the world would accept from the United States and the other nuclear states. The 187 parties to the nonproliferation treaty will meet next April to review the sta-

tus of the treaty. If the Senate rejects the test ban, we can be sure that measures to tighten nonproliferation controls and maintain sanctions on Iraq will be opposed by an outraged international community. Instead of being the champion of nonproliferation, the United States will be seen as the rogue state of proliferation.

Again, isolationists may say, "Who needs the nonproliferation regime? If we feel threatened by proliferation, we can take care of it ourselves." But the U.S. interest in keeping countries such as Iran from acquiring nuclear weapons requires cooperation from states such as Russia and our European allies in controlling exports. Washington's persuasive powers will be seriously undermined by roguish behavior on the test ban treaty.

Republicans in the Senate who want both to defeat the test ban and elect a Republican president should be careful what they wish for. If they reject this treaty they will create conditions that no new president could welcome. Given that the United States could ratify the treaty and still legally escape from it if a threat to national security emerged, the next president would likely wonder, "Whose idea was this?"

Senator BOXER. The scenarios that he talks about, and I will put them, I will say them because the powerful words that he uses and the way he does it is so amazing. He says if we do not do this treaty, and I say this especially to my friends that are undecided on it, India will probably conduct more nuclear weapons tests. India's nuclear scientists and hawkish strategists want a sophisticated arsenal, and then Pakistan would match—and as Senator Biden said, the good voices in India would be overwhelmed by this. Then Pakistan would match India test for test, and this would lead to the kind of arms race that Presidents Reagan, Bush, and Clinton have sought to block in this area.

Then he goes over to China, and he says, while China has signed the test ban treaty, it will not ratify it if the U.S. does not. China assumes that rejection means the U.S. would want to conduct more nuclear tests. Otherwise, why would they not ratify, and in this case they will make preparation to resume the testing.

Then he talks about Japan, I will not go into that. And our allies, and how crushed they would be and how they would lose confidence in us, and then I think a very crucial issue, Mr. Chairman, that we all care about, both sides of the aisle, Iran, how can we go to our friends and say, do not give Iran the technology, so it seems to me all of these things that are outlined here in this article are very, very important for us to consider as we answer the question, what are the risks of going into the treaty and what are the risks of staying out? What I do not want to see happen is future generations of kids, whether it is my grandchild or anybody else's children or grandchildren to have to go back to going under the desk to have to go back to that fear that they articulated, and so I have a brief question. I know my time is up.

Do you think that what is stated here in this article is a possibility, that it would have this type of nuclear, if you will, in quotes, "chain reaction throughout the world" where we are now going to see the tests and all the rest?

Secretary ALBRIGHT. Well, I read the article myself this morning with great interest, and I was very pleased to see that it tracked very much with my own thoughts and a great part of my testimony. I do think that we would open up the gates again of potential testing.

For me, there are several ways to look at this treaty, and I know that there are many legitimate scientifically based questions that the lab people have answered or the Secretary of Energy has an-

swered. I have looked very carefully at the stewardship program and how it works and what things are coming on line. I have obviously been very concerned about verification, and I have said to myself that every arms control treaty that we have ever signed is not perfectly verifiable, but what we make is the assessment that whatever cheating takes place is nothing that can really hurt our overwhelming nuclear power, so we have to be realistic about that.

So there are many ways to look at this from the technical aspect and the scientific aspect and all the language in these documents, and I hope that every Senator actually will look very carefully at that. But there is the other argument, which I think is just plain logic, which is, if we do not want to test, and we have said that we will not test, why would we not take the step of having a treaty that would prevent others from testing? It is not as if we are asking ourselves to do something we would not do otherwise. We are asking others to do what we have already done in order to prevent this kind of chain reaction that you have described that is so evident, and I can tell you from having spoken now, I think I spoke to 84 ministers in New York during the General Assembly. CTBT was in all my talking points. They all agreed that we need to have a nuclear nonproliferation regime, that the proliferation of nuclear weapons is the single greatest danger that faces our planet, and so for me I can go either technical on you and do all this or logical, and logical here is why, why would we want to give others the right to test or the ability to test if we have decided not to? That is the answer for me.

The CHAIRMAN. Senator Smith.

Senator SMITH. Thank you, Mr. Chairman. Madam Secretary, I appreciate you being with us. I come to this hearing truly as one of those Senators undecided and with an open mind. I also come to this hearing with a predicate of a cruel reality, a terrible truth that nuclear weapons have kept wars, since Nagasaki, have kept wars regional in their expanse and conventional in the ways in which they have been fought. And so while I hate the thought of nuclear war, I realize nuclear weapons have kept us from a worldwide conflagration.

I guess with that in mind I am anxious to know, and I guess I am appealing to your technical knowledge, if our stockpile stewardship, we are betting so much on that because what is at stake is the credibility of our nuclear deterrent, it seems to me.

Now, I know what I am about to say is not a very good hypothetical, but I have an old car at home I really like and I have a computerized trickle charger on it, and even if the battery works when I want to drive it every few times a year, it does not run very well because machinery needs to be operated. I am not suggesting we go firing nuclear missiles around, but I am concerned if we are—if the stockpile stewardship program is adequate to provide the verification, to provide the credibility that we need in order to prevent nuclear holocaust in the future.

Secretary ALBRIGHT. Let me say this, obviously I think we all have questions about, you know, our nuclear stockpile as our crown jewels, I guess, if you want to put it that way in terms of our ability to defend ourselves. In the reading that I have done and the testimony I have heard from those who really are experts in this,

the heads of the labs, they have, as was said to you previously by the Senators who were here, they may disagree about some timing, but they do not disagree about the fact that they can do the job.

We have also now said that they would have \$45 billion over a 10-year period to be able to update and keep going all of the various parts of the stewardship program, and I think that I have confidence in the way that it has been described to me about how various components of that stewardship program, first those that are on line already and those that are being brought on line in order to make sure that the stewardship program can carry out everything that it is supposed to do.

Now, there is no question that deterrence, per se, will continue because I agree with you that deterrence has kept, certainly for the United States, has kept us safe. What it does really, this treaty, it bans the bang but not the bomb. We will continue to have that.

Also, all parts of our nuclear arsenal are constantly being tested. They just will not be being exploded. I think that, again, in the testimony that Secretary Richardson provided and others, to me I feel that we do have the know-how to keep updating it and rebuilding it, and it is not quite like your car. Paying a little bit more attention to it, maybe—

Senator SMITH. I am sure you do, and that is a very poor analogy. But I just know that machinery does not work very well if you do not use it. That is true of all kinds of machinery that I have ever known. And so I am hoping that as you and I bet the future security of our grandchildren upon this program that you, as one of our political leaders, have the confidence that it is worth that.

Secretary ALBRIGHT. And I do, Senator, I do. Let me just say this, if at any stage we believe that we do not, and that something has gone wrong in terms of the stewardship program, the President, any President will have the right to withdraw on the basis of supreme national interest.

Senator SMITH. And how difficult a decision will that be? I mean, if technology takes a quantum leap and renders a lot of this obsolete, at that point do you think the President of the United States, whoever he or she may be, has the ability under this treaty to say we abrogate it and we are going on to another level?

Secretary ALBRIGHT. I think that obviously this would be done after careful thought and on advice from the Secretary of Defense and Secretary of Energy, I would hope actually on the side the Secretary of State might be asked, but I think that, yes, I do believe that if there is a question of supreme national interest, I think it would be irresponsible of any President not to withdraw if there was a question.

Senator SMITH. Flexibility has been one of my questions, and I appreciate your answer. While I have a little bit of time remaining, from what I have learned today about the inspection regime, onsite inspections that I am not going to be able to put much confidence in our ability to actually go and inspect something if 30 members of this organization, of this convention will have to approve United States' inspectors going in, and having seen the way Saddam Hussein runs our inspectors around, I frankly do not have much confidence in onsite inspection being, frankly, worth risking our grandkids on.

So I guess my question is, is it your view that such explosions as could be a threat to us we have the ability to detect them independent of any international committee?

Secretary ALBRIGHT. Yes. The scientific information that I have been given would indicate that those explosions that in any way would harm us or would undercut our ability to have that deterrent are detectable, and that we are confident that we can detect tests that would permit the development of new high-yield weapons that could have an impact on our deterrent, and we would have sufficient notice to respond.

At lower yields I think it is very important, if I may continue, that we think that Russia, for instance there have been some activities at their test sites, as at ours, frankly, but there is no conclusion that Russia has tested above the zero yield.

Senator SMITH. As you talk about that, do you think Russia has the same interpretation of zero yield as we?

Secretary ALBRIGHT. Yes. We went through a negotiating process on this. That is correct, yes.

Senator SMITH. Thank you, Madam Secretary.

The CHAIRMAN. I am trying to be fair in the time of Senators in the recognition of them. We have two Senators, one of whom has not had one bite at the apple today, Sam Brownback, and I think you had one brief period. If it is all right with you, I am going to let them. Is that OK? The reason I bring this up is because we generally go from side to side. So, Sam, you have not had a bite at the apple, you go first.

Senator BROWNBACK. Thank you very much, Mr. Chairman. I do not refer to you, Madam Secretary, as an apple. But the Chairman is very kind, and I know he does not refer to you in that way, either.

Senator KERRY. Does that mean you are going to bite anyway?

Senator BROWNBACK. No, not at all. Thanks for coming to the committee. Always appreciate you coming here. I want to look back, and you talked about going on the technical basis or just a reasoning basis, and look at it in a reasoning basis. The problem I am having with this treaty at this point in time is this point in time. It appears to me that we are talking about taking an irreversible step. Now, some might say there are ways that you could reverse your field here, but we are in essence taking an irreversible step at a time that the world is in great flux on nuclear weapons issues.

We have all noted India-Pakistan testing in recent times. Whether they will continue to or whether they will not, testing taking place in Russia has been brought up by the chairman of the Armed Services Committee. We have Iran, Iraq that we all know about of desiring to be nuclear capable countries that have not—that have signed but not ratified the treaty, and I just—I look at that universe, Madam Secretary, and I get real concerned that we are taking a step that we are going to sign a major treaty that puts our—puts it in blood for us that we are not going to do this at a time you have so many other places in play and desirous of doing things, and I really question the thought process that says that if the U.S. does this, then they will follow or they will come along with it.

I look at that list of nations that I have just listed, and I cannot within them think to myself that, OK, if we would just ratify this, that is going to make the Iranians or the Iraqis ratify. I just have a real question about that. If we would just ratify this, that is going to make the Chinese step forward and do that, if we would just ratify this, that is going to make the Russians step forward, even though they have announced a new doctrine in their nuclear weaponry that they are pursuing. If we would just ratify this, that they will come along. As I rationalize and I think rationally, look at this, I do not see that.

And then you can go to the South Asia area where we have been most concerned recently on India and Pakistan, and I think for good, legitimate purposes where you have got two nations that have been at war previously and then developing nuclear capacity which I think there is some other issues we ought to actually be discussing there other than just nuclear. I think we ought to be talking conventional weaponry and building better and broader relationships with both nations, and we were just sending you some broader authority that sanctions can be waived, that I have worked on and members of the committee here swallowed pretty hard to do that. But it is to build a broader relationship.

I question that this is not a good time for us to be making this what I would perceive, and I think many would, an irreversible step with so many countries in play still, with so many countries not really given to following U.S. leadership that are doing these things, and I think we are not at a proper moment, and I have appreciated your testimony and I would appreciate your thoughts in response to that rationale.

Secretary ALBRIGHT. Well, actually, first of all, let me thank you on the waivers that we now have for India and Pakistan. I think that that is very important, and that they will help us move forward in being able to have a better relationship with both countries, and I met with both foreign ministers while I was in New York. We can talk more about this some other time, but I would like to thank you on that.

Let me just say, I kind of look at this from a different angle, which is I think this is exactly the time because, first of all, I will keep repeating this because I think it is worth repeating. We have no intention of testing because we have no need to test, and there has been a moratorium in place put in by President Bush—there was a decision that we made that we had done enough testing and that through our various—the stockpile stewardship program, we have a way of making sure that our nuclear deterrent is safe, and if I might say among the six safeguards here that we have is the maintenance of the nuclear labs at a level to guarantee continued progress in nuclear technology, to maintain the capability to test again should the need ever arise. So we are not going into Rumpelstiltskin mode here. We are ready to go, and basically we have decided not to test.

So the question is why do this now, and it is in order to prevent exactly the countries that you are talking about from taking the next step that they might be willing to take. I have already talked about Russia. China, for instance. I think they could not probably develop their MIRV warheads for existing systems, and they could

not exploit the information that they might have obtained. Everybody has been concerned about what it is they could have obtained through espionage. They cannot use that unless they can test. This would prevent that from happening.

For India and Pakistan, it is an opportunity here to constrain a potential arms race and to limit lighter and smaller, more efficient warheads. As far as North Korea and Iran are concerned, this treaty would sharply limit their ability to develop small, efficient warheads that could be mounted on longer range missiles, including the North Korean Taepo Dong-2, which is what we have been working to try to get a moratorium on that. And it constrains their ability to exploit the missile that is the potential threat to the United States.

So I think here, this is why this is the exact moment to do this. Now, the other point, we have found previously, and I mentioned this, when we finally ratified the Chemical Weapons Convention it brought along the other countries because they do look to us for leadership. The other point I think as a safety feature, if you are interested in this, this cannot go into effect unless all 44 of those designated countries do, in fact, ratify. So if we ratify and those others do not, it does not go into effect. It is a safety feature of that kind.

So for me this is basically we lose nothing because we do not want to test, we prevent them from testing, and doing the kinds of things that I listed. We have a way out if we find that we have a problem because we can do supreme national interest, and meanwhile, our labs have been directed to keep us in tip top shape via virtue of other methods which, short of testing which we do not need, will make our nuclear deterrent reliable.

Senator BROWNBACK. I thank you for comments, and, Mr. Chairman, for your holding of the hearing. I think you are willing to step out a little further in faith and presumption that they are going to follow our lead than I would or that by us signing that we are going to be willing to reverse field later if they do not verify. I think we put very high stock in the fact that if we ratify, well, that is it, even if they do not come along. I think you are going out in steps of faith that I am not quite willing to assume at this point.

Secretary ALBRIGHT. Could I ask a question here, which is the following: Why do we think, you think that we lose anything by getting them to stop testing? That is the question. Because we are not limiting ourselves in any form. And if they do not ratify, if those countries that you mentioned do not ratify, this treaty does not go into effect.

Senator BROWNBACK. Well, I disagree with your presumption that we do not limit ourselves. I think this is a very big step for a Senate to ratify a treaty like this, saying that this is what we believe should be the case when you have so many other players out there that are still looking, testing, and not really willing to follow the United States' lead. The countries I listed I do not think will be following our lead. Iran and Iraq I know for certain will not be following our lead. I highly question the other countries that we list. To me, voting on this, and you have got a treaty that you are doing this with, that is taking a step that I do not think you back

away lightly. Mr. Chairman, thank you for your patience in holding the hearing.

The CHAIRMAN. Senator Grams.

Senator GRAMS. Thank you very much, Mr. Chairman. Madam Secretary, again, I also add my thanks for you taking the time to be before the committee today. I have gone through all my questions. I can tell maybe when the hearing has gone on long enough that every question or good question has already been asked, so I am going to try to ask one of the old questions and just do it in a different way so I have something to say here. But I appreciate it.

I know we could line up experts on both sides of this argument. We have heard people say this is the right time, this is not the right time, we can verify, we cannot verify. It seems like there is people on both sides of the argument.

We are taking, as I think Senator Brownback just said, a leap of faith here in some concerns, I know like the lab directors who Senator Levin said today when he asked them point blank, are you onboard, they said yes, but also we have got statements from lab directors that say in order to contribute to a long-term confidence in the U.S. stockpile, testing of nuclear weapons should be done.

Of course, if nuclear testing were allowed, we would gain greater confidence in the new tools, another quote from a purely technical standpoint, "some level of nuclear testing would be useful." Another quote, "a strong stockpile stewardship and management program is necessary to underwrite confidence." So I think even some of the experts have been able to be on both sides of this issue, so I think you see how tough of an issue it is, I think, for some of us to come to a conclusion.

You have said this is the right time. We are being asked to vote basically up or down on a treaty, you know, there has been questions of whether the administration negotiated a position on the treaty different from what where we started, of having a definite duration, permitting low-yield tests, it was a verifiable treaty, we are now doing something different than that. Article 15 dealing with reservations that says the articles out in the annexes to this treaty shall not be subject to reservations. The UC that we have on the floor if we take a vote is basically unamendable, so we are being asked to vote up or down on a treaty.

Do you think this is the best time to vote on this treaty or would you go along with maybe some of the suggestions that have been made that this vote not happen for maybe another 2 years?

Secretary ALBRIGHT. Well, first of all, let me say that I am very glad that this hearing has taken place, and I think that I respect all the questions that have been asked and have been very pleased to answer them. I also do think that the kinds of questions that you have asked of a technical nature all need to be answered in a way that satisfy you.

Just briefly, I can say that on some of the issues that have been raised by the labs, work is in progress on this, and they have been given not an inconsequential amount of money, \$45 billion to work on it, which presumably is in order to be able to carry through on this kind of work to make sure that it can be done. I would hope very much that this conversation would not lead to our saying that

we want to resume testing. I think that would be a U-turn of such major proportions that it would undercut our entire proliferation, our nonproliferation policy, and I think would be a very, very serious consequence for this country if we were to even contemplate that when we do not need to.

In order to answer your question, let me just say that I do believe that this is an important treaty, that it deserves careful consideration. It is one of the, you know, landmark huge treaties that we have been—we have negotiated and you have been asked to ratify. I think that the process has been artificially constrained, and it does not give time to reach a careful judgment, and I think that the leadership ought to work out some kind of a serious process to give this treaty the careful attention it deserves at a later date.

Senator GRAMS. One other question I wanted to ask and I had asked it of the earlier panel, but a lot of faith would be put in computerized testing and not actual testing of weapons. And there was an article this week in the New York Times, I think it was, Mr. Adamov, who is the Russian Minister of Atomic Energy, talking about having those supercomputers and the article included, Russia has long sought to acquire powerful American computers able to do this. And he said in the article, “the United States should share some of its computer techniques so that other nations can better assess the reliability of the nuclear arsenal without testing.”

He went on to say, “conditions should be established that all nations who possess nuclear weapons would have the same opportunity to engage in computer simulations.” The Russians have long asserted the Clinton administration promised to provide such advanced abilities to Russia if the Kremlin agreed to the test ban. Does that mean under this negotiation, or has the administration given any indications that it would somehow share this generation or the next generation of our computer abilities with the Russians?

Secretary ALBRIGHT. Let me say that we have made no such promise, and we will not do that.

Senator GRAMS. Thank you very much. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Biden.

Senator BIDEN. Mr. Chairman, I will be brief. Let me make a couple of points while my colleagues, all of whom, the two gentlemen who are still here, who I respect greatly, and they raise questions that I think warrant further exploration, and I won't take the full time now, but I asked my staff while you were testifying, Madame Secretary, to get the makeup of the executive council.

You know, you need 30 votes on the executive council to be able to have an onsite inspection, and the question has been raised by many would we actually really get 30 votes, and the analogy that is used by Ms. Kirkpatrick before you testified was the United Nations, and you can't do anything in the United Nations, et cetera. I actually went down the list, or I did and my staff did, and Africa gets 10 seats, Eastern Europe 7, Latin America 9 and the Middle East and South Asia 7, North America and Western Europe 10, East Asia 20. If you add these up and you look at each of the nations, we get right away to 23 or 24 certain votes.

And then the states, even the states that are not certain, let us take Eastern Europe, Bosnia-Herzegovina, Bulgaria, Croatia, the

Czech Republic, Estonia, Georgia, Hungary—Georgia because they are afraid of Russia, they are afraid of Iran and Iraq. Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Slovakia, Slovenia, these are all votes. These are all votes, because in their naked self-interest they are going to want to make sure that Iran and Iraq, the people they view as their enemies to be, they are potential threats unrelated to us.

So if you go down the list here, I just say to my colleagues, and I will put this in the record, it seems to me pretty darned easy to get to 30 votes, not because 30 nations love us, but because it is in their naked self-interest. In the Middle East section they get 7 seats, 26 eligible folks, right? What do you think Turkmenistan or the Arab Emirates, Uzbekistan and Yemen, do you think they are going to say, Nah, we do not want them to check whether or not Iraq and Iran are blowing up nuclear weapons? Do not worry about it; it is OK by us, because we do not like the Ugly Americans? I mean, I just think people should look at the list and look at other countries' self interests. Again, obviously, you cannot guarantee anything.

[The information referred to follows:]

BIDEN STAFF ANALYSIS OF LIKELY CTBTO EXECUTIVE COUNCIL VOTING

- A quick review of the candidates for seats indicates that we should expect, in almost all instances, to get all the votes of the West Europe/North America group. So we start with 10.
- Aside from Yugoslavia, Russia, and one or two others, the Eastern Europe group comprises strong U.S. allies. So that's another 5–7 votes.
- Similarly, many of the Latin American states either: (1) are strong allies; or (2) strongly favor the Test Ban. So we should usually get most of those 9 votes.
- That gets us very quickly to the low-to-mid-20's, in most instances (even being conservative and assuming that we don't get all the votes in the above 3 groups).
- That leaves the Africa group (10 seats), the Middle East/South Asia group (7 seats), and the East Asia group (8 seats). There our work, depending on the makeup of the Executive Council at the particular time, could get a little harder.
- But even there the rosters have U.S. allies, or proponents of nonproliferation.
- Thus, it is hard to see how we won't get to 30 in most instances.
- In truth, it is more likely that most U.S. inspection requests, based on our intelligence and the data from the International Monitoring System, will be easily approved.

Senator BIDEN. With regard to this issue of the United States will not test, I find it kind of fascinating that the Senator just indicated, which is legitimate, that we have got these supercomputers and the Russians are saying, and every other nation, everybody forgets, because we focus on the trees instead of the forest here, everybody else we hear from today.

From the chairman of the Armed Services Committee, we heard from Mr. Schlesinger yesterday. The chairman was kind enough to give me an opportunity to participate as an ad hoc member of that committee, about how our allies and our enemies are going to lose confidence in our ability to verify that our stockpile is reliable and that it is safe.

Now with regard to our enemies, quote, unquote, "That is how they view it." Russia and China—I do not consider Russia my enemy, but that is how it is considered, right? They are going to—the argument went yesterday, and we will hear on the floor,

they are going to say, You know, those Americans, you cannot rely on those 6,000 weapons because they are not testing anymore, so now is our chance.

That is the implication of it. When in fact the Russians are saying, Hey, this ain't fair, you have got these supercomputers; you guys are going to know your weapon system is reliable; we are not going to know. Give us the computer system. I mean, Mr. Chairman, the way we argue in the alternative here, we say, Hey, our system is not reliable, but look at those Russians. They are trying to get hold of our system. How to deal unreliably without testing?

Then we say, Well, we are not going to—we will not be allowed to modernize, but you know what, if this goes forward, those other nations will modernize.

Well, give me a break. We by far and away are more sophisticated than any other nation in the world, and if we cannot modernize, how the heck are they going to modernize?

And so my point, the thing I would like you to speak with me about a second, Madame Secretary, and I will end this, is that we are in a position where we have decided not to test. I do not know, have you heard, has anybody from the foreign policy establishment on the center right, where you would find those who do oppose—and a lot there do not oppose—but who do oppose the treaty, has anyone suggested publicly, and is anyone on this committee suggesting we should resume testing?

I mean, that is a legitimate question. I sincerely mean it. Has any significant name in the foreign policy establishment said to you publicly or privately that we should resume testing?

Secretary ALBRIGHT. No, no one has. And I think the question here is where do these questions lead to, because that is the problem. It leads to the supposition that you might want to test when we do not want to test, when we have been the lead in not testing.

Senator BIDEN. My time is up. But I am sorry to do this to you and I will end, because there is another panel, but the second point I would make is, if you cut through the concern of the people I most respect, and I respect some of the very same people my Chairman does, people like Schlesinger, people like Ms. Kirkpatrick, people like Caspar Weinberger, you cut through it all and here is the real objection and it is legitimate. (a), even though we can get out, we will not have the will to get out; (b), we do not have the political will.

No. 2, that even though the circumstance would not allow any President, this or the next one, to unilaterally begin testing, because the political climate would be so counterproductive if they did that, even though that is the case, and we will not be testing, it is better to not sign on to a treaty, because we want to hold off that possibility to test.

The third thing you hear is, the third legitimate argument I think is, You know, if you stop testing you lose an entire generation of nuclear scientists who learned a lot about nuclear weapons by the testing. That is an argument Schlesinger and others make. It is legitimate. It is legitimate, but I do not understand how they do not understand, if you are going to spend \$45 billion in those laboratories, how you are not going to attract an entire new generation who are going to be even more sophisticated.

So, Mr. Chairman, I have gone beyond my time as usual. But you are kind to let me do it. There are legitimate arguments against this treaty. I respectfully suggest none of them have to do with verification, with our ability, our stockpile not being reliable, et cetera. I think they go to deeper fundamental questions, which is always the case, why my friend says, as—I forget who he always quotes, but he quotes somebody and says, “We have never lost a war or won a treaty.” I think that is something that is the fundamental dividing line here on this, and it is a legitimate one, but I think we should argue it up front, talk about the forest, not just the little, tiny trees in the forest. But I thank you for being here.

Secretary ALBRIGHT. Thank you. Let me just say two words here, one on the list that you read. A lot of those countries were the countries—were the countries that were in the NPT review who were the ones who said go for a comprehensive test ban treaty. So that is part of our faith with them, so why would they not, in fact, want us to be able to have those kinds of onsite inspections? It is for their benefit.

Let me say on the last point you make about the treaties, I, along with all of you, have spent a major portion of my adult life looking at arms control treaties and there always are these questions. What do we do then? They are not perfect. They can cheat, and as Ronald Reagan said, “Verify”—here, I think, “Do not trust; verify.” I think we, in the end, all based on that, everything that is important can be verified. The problem here is we have to understand—that I happen to believe that we are better off because of the arms control treaties we have had. They are not perfect; neither is this one. But it is beyond my understanding as to why, when we are not going to test, and in my belief should not test, and have the best scientists in the world with the state-of-the-art, that they have \$45 billion now to even improve, why would we give a license to those countries that want to test the ability to do so with impunity when we can actually get our arms around the nuclear arms race and strangle it.

The CHAIRMAN. Madame Secretary, I am one of the culprits in thinking that we could cover more territory than we have been able to cover today, and I am so apologetic to the third panel, but if they will persevere, I will. But I do have one question that bothers me, and I must ask it.

We, when we questioned John Holum as to why the treaty fails to define what it purports to ban, he gave me a very confusing response. He said, and I quote him, “The course of negotiations confirmed our judgment that it would have been difficult and possibly counterproductive to specify in technical terms what is prohibited by the treaty.”

Now my question is, one of them, is the reason that it would have been difficult and counterproductive to pursue such a definition because other countries interpret the treaty to permit low-yield testing? Do you feel it does?

Secretary ALBRIGHT. I believe that this treaty is zero-yield. And that is the basis on which it has been presented to you.

The CHAIRMAN. Well, that is not a yes or no.

Secretary ALBRIGHT. Undersecretary Holum?

The CHAIRMAN. We are all friends here. We are just trying to get to the truth.

Mr. HOLUM. The basic answer is that there was a history going back to the threshold test ban treaty and other treaties that no yield—that zero means no testing at all. It was discussed extensively as Ambassador Ledogar went into, I believe, earlier today in his testimony. Among the nuclear weapons states, the only ones having any capability to do something very small, they had a long history of negotiations among themselves back and forth and came to an agreement, as Ambassador Ledogar described, that zero means no yield. And all other countries understand it that way, as do the five nuclear weapons states.

The CHAIRMAN. Well, he handed me a note, which is correct. The treaty does not say zero; it does not define its terms at all. That is the point I am making.

Mr. HOLUM. But it does ban any nuclear test explosion or any other nuclear explosion, and in the negotiating record it is very clear that that means there cannot be any critical yield from a nuclear event. You can do things that do not go critical; you cannot do things that do.

The CHAIRMAN. What I am getting at, of course, is the Russian Government has clearly stated the view that hydronuclear testing is permitted. Now, there is a chart somewhere over there that contains a quote from the Deputy Minister of Atomic Energy stating this view. Now, this is a senior Russian Government official, and I am sure there are plenty of other Russians claiming that they will adhere to a zero-yield ban, but the fact of the matter is Russia has stated a need to develop a new low-yield tactical nuclear weapon and has stated the intent to conduct nuclear testing despite CTBT. That is correct, is it not?

Secretary ALBRIGHT. Let me state here, Mr. Chairman, some Russian officials that have not been involved in the negotiations appear to be confused about its limits. The negotiating record that Ambassador Ledogar described said that zero means no nuclear yield, however small, and that is the standard we will apply. The Russians described their test site activities as subcritical. That is the same thing we are doing. That is, those that do not have a chain reaction.

The CHAIRMAN. I think I understand that. But Russia has a clear pattern of activity at its nuclear test site and this is the bottom line. How is it possible to reach any conclusion other than that Russia does not interpret the test ban in the way the United States of America does?

Mr. HOLUM. I just encourage you to look closely at what Ambassador Ledogar has produced, and the record of the negotiations, it is the same as the legislation here. You rely first of all on the terms of the law and then on the legislative history to identify what the agreement means, what the legislation means. And it is, although Victor Mikhaylov would very much like to have the treaty say something other than it does and have it mean something other than what it does.

The CHAIRMAN. I get more confused as we get into this thing, and I am almost sorry I did it. Are you saying that the Deputy

Minister of Atomic Energy does not know his Government's position on nuclear testing? Is that what you are saying?

Mr. HOLUM. It appears to be that that is the case, because he is saying something that is inconsistent with what his Government agreed to in the Conference on Disarmament in Geneva.

The CHAIRMAN. Very well.

Senator BIDEN. Mr. Chairman, why does he not answer the rest of your question? I do not think he did, in all due respect. The chairman said that how can you interpret based upon what is going on in Russia now, not verbally, but in terms of quote, "the alleged testing"? How can you interpret that they mean anything other than something less than zero? Is there any evidence, conclusive evidence, that they are testing nuclear weapons now?

Mr. HOLUM. No, there is not. There is activity at the test site, as the Secretary said, and I am sure most of you or many of you have had the briefing that the CIA has generated on that subject. There is no conclusion in that, and I cannot go into it in detail here, but there is no conclusion in that that they are doing anything that would violate the threshold or the level of permitted activity in this treaty.

The CHAIRMAN. Well, what is the activity at the test site? Are they playing poker or something?

Mr. HOLUM. Well, we are doing the same thing, Mr. Chairman, at our test site that they claim to be doing at theirs. We are doing subcritical experiments; we are setting off high explosive devices with material that serves the function of fissile material to see that it works. We are going that close. But as soon as it becomes critical, it violates the treaty. If it produces a nuclear yield, then it violates the treaty threshold.

Senator BIDEN. In other words, Mr. Chairman, you can have an explosion that can be detected that is not a nuclear explosion. It can be an explosion for the stuff that blows off the nuclear explosion. And I understand the way a nuclear weapon works, there is an explosion, a high explosive that is not a nuclear device that in effect detonates the nuclear device.

Mr. HOLUM. That is right.

Senator BIDEN. And you can test that to determine whether that works, right?

Mr. HOLUM. That is right. You can test all the way up, but I feel as a lawyer, I feel very uncomfortable answering questions on that when you have Dick Garwin on the next panel, who knows everything there is to know about that.

The CHAIRMAN. Maybe we can get an answer that clears up my confusion from that panel. But seriously, I thank both of you, Madame Secretary, I know this has been a grueling experience for you, particularly since you came across the country to do this. And I appreciate it very much.

Secretary ALBRIGHT. Thank you. Actually, it has been quite enjoyable. I appreciate the fact that you had the hearing, Mr. Chairman.

The CHAIRMAN. Thank you very much. We have a vote on, and we would invite the third panel to come to the table if they are still waiting.

[Pause.]

The CHAIRMAN. Let us see. We have two out of three, and there in a moment will be our good friend Ron Lehman, who is former Director of the Arms Control and Disarmament Agency, and Mr. Troy Wade is seated in the middle chair, the chairman of the Nevada Alliance for Defense, Energy and Business from Las Vegas. And last, but not least, Dr. Richard L. Garwin, senior fellow for Science and Technology at the Council on Foreign Relations in New York City.

Now, I am sorry we are so late getting started, but we did the best we could, and we tried to do too much in one day, and you are paying for it. Back when I was a boy in grade school, we used to say, that will learn you, darn you. But why do we not start with you, Ron? And you can begin your statements, and I will go as far as I can until one of the other Senators gets back. And you understand the predicament we are in. And I welcome all of you, and I am grateful to all of you, and the next time we will not treat you this bad.

STATEMENT BY HON. RONALD F. LEHMAN, FORMER DIRECTOR, ARMS CONTROL AND DISARMAMENT AGENCY, PALO ALTO, CA

Mr. LEHMAN. Mr. Chairman, thank you. I know the hour is late, but I am prepared to stay and help as best I can. I was asked to prepare a statement but I did not get the invitation until 2 days ago, so if I had had more time, it would have been much shorter. But I was asked also to try to address many of the issues that—but there are so many that there is no way that I could. Nevertheless, given the hour, perhaps I should submit the longer statement for the record. Or would you prefer that I go through it in some detail?

The CHAIRMAN. Please submit the statement, but that does not eliminate my desire for you to discuss the issue.

Mr. LEHMAN. All right, then let me try to capture some of the issues that are a bit different than others than have been raised, perhaps. I focused on this issue, as you know, for many years and have been before this and other committees many times, but I want to emphasize today that I am here solely in my personal capacity and that none of my views are the views of any administration or organization or institution with which I am now or have been associated.

Having said that, I think you will find a tremendous consistency between what I say today and what I have said in the past. But of course, there is some modification to reflect changes on the international scene.

I think what I want to highlight is the difference between my testimony this time and the tone of my testimony in the past. In the past, I have really been fortunate to come before this committee and stress accomplishments, but today I think what I would really like to talk more about is what it is we are failing to do. And when I say "we," I mean the entire foreign policy establishment of the United States, and frankly I mean both the legislative and executive branches and I mean concerned citizens and individuals such as myself.

What the United States has failed to do at the end of the cold war is to articulate a strategy that sustains the momentum that we had achieved at the end of the cold war in building a better and safer peace. And I would like to highlight some of the reasons why that is so. Despite the best of intentions of talented people in and out of government, we as a Nation have not been able to deal with powerful trends such as globalization and technological advance which have created new difficulties as well as new opportunities. In part, we have failed to deal with the legacies of the past, such as regional instabilities, ethnic conflicts, economic resentments, geopolitical ambitions and domestic political divisions overseas and at home.

I think that we have also forgotten some of the basic principles that led to the success of the arms control revolution at the end of the 1980's and in the early 1990's. Those basic principles placed an emphasis on high standards of military merit, pressing the verification envelope, and creating the geo-strategic conditions for progress. The current debate over the "zero-yield" Comprehensive Test Ban Treaty reflects all of those factors—new forces, painful legacies and neglect of the basics.

To put the current discussion in perspective, it might be useful to remember how we got to where we are. The history of nuclear testing arms control is complex and sometimes colorful, not always dignified, but always an important reflection of broader forces in play. The history is too lengthy even to summarize here, yet a clear American approach to the question of nuclear testing had emerged over the years. The primary contribution of nuclear testing limitations had been achieved by the 1963 Limited Test Ban Treaty which banned tests everywhere but underground and thus dealt with health and environmental dangers associated with large nuclear tests in the atmosphere. These dangers were reduced somewhat further by the 150-kiloton restraint on underground testing of the 1974 TTBT, although dissatisfaction with its verification provisions (and those of the PNET of 1976) delayed ratification for 16 years.

Concerns about compliance with the TTBT while the U.S. continued a moratorium, however, ultimately led to the "fly-before-buy" Joint Verification Experiment and subsequently the Verification Protocols to the Threshold Test Ban Treaty in the PNET. These protocols were negotiated with the very closest consultation with this committee and the rest of the Senate. The resulting process and protocols radically transformed onsite inspection, set a new standard of effective verification, and resulted in the Senate giving consent to ratification unanimously by a vote of 98 to 0.

Although the Eisenhower, Kennedy, and Carter administrations had explored more comprehensive negotiated and codified limitations on nuclear testing, none was able to achieve them, even given the easier standards of verification and military merit which had been developed in those earlier periods. All ultimately were compelled to explore more limited approaches to test bans in terms of less binding moratoria, or reduced yields, or partial bans, or time limitations, or combinations of these.

By the end of the cold war, U.S. policy had evolved a step-by-step approach to nuclear limitations that was cautious, and for good

reason. Nuclear testing limitations were of increasingly limited arms control value in the superpower context. More useful approaches to arms control than nuclear test limitations were now possible, and increasingly we were exploring ever more cooperative and intrusive threat reductions. And frankly, the nuclear testing issue also had a greater potential to be divisive at home and abroad, thus diverting resources from more valuable nonproliferation efforts such as regional peace processes, "loose nukes," a timely cutoff of unsafeguarded fissile material production, and the growing concern about biological weapons and terrorism.

If arms control is narrowly defined, the arms control merit of nuclear testing limitations was seen as of increasing utility and increasing danger to the U.S., the lower the limit. It was not a straight line, but generally that was the case. Why? Because the wrong nuclear testing limitations could put at risk the nuclear deterrent of the United States and undermine security guarantees and relationships under which other nations felt it possible to forgo nuclear options of their own.

The impact of nuclear testing limitations on the U.S. nuclear deterrent is a lengthy discussion of its own. I am prepared to address these issues, but in the interest of brevity let me simply highlight several points related to arms control. The United States has never been fond of qualitative arms control measures because so often they work against advanced industrial democracies. The democracies look to technology to compensate for manpower and to free resources for other public goods. Limits on science and technology are difficult to define and frequently harder to verify than quantitative limits, so qualitative constraints here again tend to favor closed, authoritarian societies, all other things being equal (which, of course, they actually never are).

But more importantly, democracy as we practice it demands accountability. To maintain our nuclear deterrent we must be able to demonstrate to the American people and their elected officials that the weapons in the stockpile are safe, secure, reliable, and appropriate to their missions. When two physicists differ dramatically in their assessments, responsible officials want to know the truth. Nuclear testing has often been the only way certain disputes could be resolved with the necessary finality. Inherent in the debates over the "spirit of the CTB" are pressures to codify ignorance and police thinking in ways that create tensions with U.S. interests, democratic responsibility, and even the scientific method.

The most compelling reason that the United States never walked away from the CTBT as a long-term goal was nonproliferation. Yet even here, there were serious concerns about the impact of the CTBT. All but a handful of states (Cuba, India, Israel, Pakistan primarily) are already parties to the nonproliferation treaty. Except for the five nuclear weapons states, these parties are obligated not to have nuclear weapons programs and thus should not have nuclear weapons to test. The main thrust of the CTBT actually involves very few states. Often the CTBT was seen in the West as a halfway house for those states outside the NPT into the NPT. The problem is that some in those states saw the CTBT as an alternative regime to the nonproliferation treaty, one based on a

more egalitarian principle under which all parties would be free to have nuclear weapons. They just could not test them.

The danger is the CTBT then becomes a halfway house out of the NPT, or at least a less restrictive alternative approach to non-proliferation. This need not happen, but it could if we are not careful. Already it has become common in public discussion to speak of proliferation as having occurred only after a state has tested its nuclear weapons. This erosion of standards is very dangerous and again reflects the mistaken belief that proliferators must always test their weapons to have confidence in them. This involves more mirror imaging than is warranted. The proliferators' needs are not the same as ours.

Also, as technology such as supercomputing advances and spreads, more and more states will be able to have confidence in more and more nuclear weapons capability without testing. To address these problems, the United States and like-minded states must work to address fundamental regional security concerns. Above all, it must avoid the neo-Kellogg-Brandism that would have us substitute grandiose global pledges for the hard work of creating the conditions for a safer world by engaging states and regions of concern. Already we have seen in the context of the CTB a worsening of the situation in South Asia.

Still, it would be wrong to say that the CTBT only relates to a few. Many of the parties to the nonproliferation treaty have said their commitment to remain in the treaty is related to the implementation by the nuclear weapons states of article VI of the treaty. The NPT commits the nuclear weapons states to a cessation of the nuclear arms race and commits all parties to work toward general and complete disarmament. Most of these states have taken the position that the achievement of a CTBT is required under article VI, but most have also said that article VI also requires the ultimate elimination of all nuclear weapons themselves. And the official policy of the United States remains that this, too, is an ultimate goal.

How does the United States reconcile this view with its view that the nuclear umbrella and security guarantee it provides to key allies also is necessary for nonproliferation? The answer always has been that the United States will not give up its nuclear weapons until the conditions have actually been created in which they are no longer necessary. To do otherwise would result in powerful pressures for nuclear proliferation. Half the world's population lives in countries that have nuclear weapons, and if we do not deal with the legitimate security concerns of the others, more states will seek their own weapons of mass destruction programs.

If a CTBT were to shatter confidence in safety, security and reliability of the American nuclear umbrella, they may do the same. If we invoke safeguard F, involving the supreme national interest clause, we may provoke or legitimize similar acts by proliferators. This safeguard carries almost the entire weight of the argument for this CTBT, yet it puts the United States in a "damned if you do, damned if you do not" situation with respect to nonproliferation, especially if there are states simply looking for a pretext to test.

Mr. Chairman, it is my personal view that the arms control arguments for a zero-yield CTBT are not compelling and that the non-proliferation impact of any CTBT can be very uncertain and involve

foreseeable dangers as well as unintended consequences. A better way to proceed is a step-by-step process in which constraints are related to advances in verification, advances in a validated stockpile stewardship program, development of an appropriate weapons stockpile for a post-cold war and testing limited environment, and advances in global and regional security. Unfortunately, all of this is about why we did not want to be where we are now.

But we are here now. What should be done now? Without this treaty or with it, we should continue to work with other nations, but most particularly with countries of concern to advance a more cooperative, but realistic security relationship. With or without this treaty, we should continue to address verification and compliance challenges, and I believe that should also include those associated with nuclear testing restraints. With or without this treaty, we should exploit a vigorous stockpile stewardship program so that we can have confidence in our deterrent while also demonstrating the maximum restraint possible. With or without this treaty, we must continue to develop and implement a more coherent, bipartisan strategy for building a safer world.

If this treaty were time limited, were not zero yield, provided restraints at more verifiable levels, provided more clearly for the legitimacy of further testing (if and when it is needed), were not so prone to ever more restrictive interpretation down the road, and if conditions were such that the stated nonproliferation objectives could actually be achieved, then the debate would not be so intense. Unfortunately, this treaty, signed already by the United States, is none of these things, and there is no easy way to fix it.

To approve this treaty may undermine years of accomplishment in arms control and nonproliferation. Yet expectations about this treaty have been built up around the world and here at home. The case for this treaty is weak, but unfortunately, the explanations for why the conditions for this treaty do not exist have also not been made even to our allies. These explanations are only now finally being made to our own citizens. It is one thing to say we never should have gotten into this position. It is another thing to make a worse hash of it. The challenge to this committee and executive branch is to find a way to get American nonproliferation strategy back on a sound footing such that it earns bipartisan support and provides the U.S. leadership necessary in the global arena.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Lehman follows:]

PREPARED STATEMENT OF HON. RONALD F. LEHMAN

Mr. Chairman, Members of the Foreign Relations Committee:

On numerous occasions, I have appeared before this distinguished panel to discuss the policy of the United States on arms control and nonproliferation. From the perspective of various positions I then held in government, I addressed the nuclear testing question. More recently, you have asked me to testify as a private citizen. It is in that personal capacity that I testify today, and only in that capacity. Thus, you should not assume that these are necessarily the views of any administration, organization, or institution with which I am now or have been associated. Please take that admonition to heart. The ability of individual citizens to keep their professional responsibilities and their private views in their proper place is the key to harnessing the diverse skills of this nation. I did not ask to testify, but I would never turn down your request. Given the burdens you shoulder, I recognize the importance of working together in a candid, nonpartisan way on behalf of the nation's greater good.

The views I express today are entirely my own. At the same time, this committee will recognize a consistency in my presentations over the years, although some of the details have evolved with changes on the international scene. There is one important difference, however. The theme of my previous presentations has been to emphasize what we are accomplishing. Sadly, my theme today emphasizes what we are failing to do. And by “we” I mean the aggregate foreign policy community of the United States including both executive and legislative branches of governments as well as concerned individuals such as myself.

Despite the best of intentions of talented people in and out of government, we as a nation have failed to articulate and implement a strategy that sustains the momentum toward a better, safer world achieved at the end of the Cold War. Indeed, many past accomplishments in arms control and nonproliferation have begun to unravel. In part, powerful trends such as globalization and technological advance have created new difficulties even as they offer new opportunities. In part, dealing with legacies of the past such as regional instabilities, ethnic conflicts, economic resentments, geopolitical ambitions, and domestic political divisions overseas and at home has been a larger challenge than expected.

And in part, we have all forgotten some of the basic principles that brought success in the arms control revolution at the end of the '80s and into the early '90s. These basic principles placed an emphasis on high standards of military merit, pressing the verification envelope, and creating the geo-strategic conditions for progress. They put a premium on solving problems, not on declaring them solved. These sound negotiating principles led to the two START treaties, the INF Treaty, the Treaty on Conventional Forces in Europe (CFE), the Chemical Weapons Convention (CWC), the Joint Verification Experiment (JVE) at nuclear test sites, the Verification Protocols to the Threshold Test Ban Treaty (TTBT) and Peaceful Nuclear Explosions Treaty (PNET), and many other important agreements. These agreements were important and valuable, not because of signing ceremonies, but because they were part of a comprehensive national security strategy which very clearly served the interest of the United States and its friends and allies. Because these agreements were negotiated tenaciously, but directly and in detail with the relevant parties, they also had the effect of reducing tensions with potential adversaries. Because they were negotiated in the closest of bipartisan consultations, they were all approved by the Senate and supported by the Congress as appropriate.

The current debate over the “zero-yield” Comprehensive Test Ban Treaty (CTBT) reflects all of these factors—new forces, painful legacies, and neglect of the basics. To put the current discussion in perspective, it might be useful to remember how we got to where we are. The history of nuclear testing arms control is complex, sometimes colorful, not always dignified, but always an important reflection of broader forces in play. This history is too lengthy even to summarize here. Yet, a clear American approach to the question of nuclear testing had emerged over the years.

The primary contribution of nuclear testing limitations had been achieved by the 1963 Limited Test Ban Treaty which banned tests everywhere but underground and thus dealt with health and environmental dangers associated with large nuclear tests in the atmosphere. These dangers were reduced somewhat further by the 150 kiloton restraint on underground testing of the 1974 TTBT, although dissatisfaction with its verification provisions (and those of the PNET of 1976) delayed ratification for sixteen years.

Concerns about compliance with the TTBT while the U.S. continued a moratorium, however, ultimately led to the “fly-before-buy” Joint Verification Experiment and subsequently the Verification Protocols to the TTBT and PNET. These Protocols were negotiated with the very closest consultation with this Committee and the rest of the Senate. The resulting process and protocols radically transformed on-site inspection, set a new standard of effective verification, and resulted in the Senate giving consent to ratification unanimously by a vote of 98-0.

Although the Eisenhower, Kennedy, and Carter Administrations had explored more comprehensive negotiated and codified limitations on nuclear testing, none was able to achieve them, even given the easier standards of verification and military merit which had been developed in those earlier periods. All ultimately were compelled to explore more limited approaches to test bans in terms of less binding moratoria, or reduced thresholds, or partial bans, or time limitations, or combinations of these.

By the end of the Cold War, U.S. policy had evolved a step by step approach to nuclear limitations that was cautious, and for good reason. Nuclear testing limitations were of increasingly limited arms control value in the superpower context. More useful approaches to arms control than nuclear test limitations were now possible, and increasingly we were exploring ever more cooperative and intrusive threat

reduction. And frankly, the nuclear testing issue also had a greater potential to be divisive at home and abroad, thus diverting resources from more valuable non-proliferation efforts such as regional peace processes, "loose nukes," a timely cut-off of unsafeguarded fissile material production, and the growing concern about biological weapons and terrorism.

For a number of reasons, no next step after the TTBT was formalized at the end of the Cold War because at the substantive level, the nuclear testing issue had been overtaken by events. Implementation of the TTBT was to have provided technical experience for the next step, but this was overtaken by momentous events such as the breakup of the Soviet Union (including achieving START II and the adherence of Ukraine, Kazakhstan, and Belarus to the Nuclear NonProliferation Treaty (NPT) under the Lisbon Agreement), and by domestic legislation. The TTBT itself, however, with its lower inspection thresholds suggested that some ratcheting down of permitted yields might be explored cooperatively. The end of the Cold War and improvements in testing instrumentation and science offered the possibility also that the number of tests could be reduced. Some thought was given to limiting the number of tests above a verifiable threshold. The Executive Branch found no new substantive reasons then to pursue immediately a near zero-yield CTB, much less a zero yield CTB, because the conditions under which they would be in the interest of the U.S. and its allies were not seen on any horizon.

Generally, arms control is best defined broadly to include nonproliferation, confidence building, and the like. But one can define arms control more narrowly, as is often done, as meaning the negotiation of limits on weapons and forces and as something distinct from nonproliferation. From the perspective of that more narrow definition, the arms control merit of nuclear testing limitations was seen as of decreasing utility and increasing danger to the U.S. the lower the limit. It was not a straight line, but generally that was the case. Why? Because the wrong nuclear testing limitations could put at risk the nuclear deterrent of the United States and undermine security guarantees and relationships under which other nations felt it possible to forgo nuclear options of their own.

The impact of testing limitations on the U.S. nuclear deterrent is a lengthy discussion on its own. I am prepared to address these issues, but in the interest of brevity, let me simply highlight several points related to arms control. The United States has never been fond of qualitative arms control measures because so often they work against advanced industrial democracies. The democracies look to technology to compensate for manpower and to free resources for other public goods. Limits on science and technology are difficult to define and frequently harder to verify than quantitative limits, so qualitative constraints here again tend to favor closed, authoritarian societies, all other things being equal (which of course they never are). Often, an undesirable tension is created between quantitative arms control goals and qualitative measures. In the case of nuclear weapons reductions, the inability to test makes it more dangerous to reduce the size of the nuclear weapons stockpile. To hedge against uncertainty, larger numbers, greater variety, and more spares are required to maintain the same confidence.

But more importantly, democracy as we practice it demands accountability. To maintain our nuclear deterrent we must be able to demonstrate to the American people and their elected officials that the weapons in the stockpile are safe, secure, reliable, and appropriate to their missions. When two physicists differ dramatically in their assessments, responsible officials want to know the truth. Nuclear testing has often been the only way certain disputes could be resolved with the necessary finality. Inherent in the debates over the "spirit of the CTB" are pressures to codify ignorance and police thinking in ways that create tensions with U.S. interests, democratic responsibility, and the scientific method.

If, from a narrow arms control point of view, the CTBT has been so unattractive to the United States, why did the United States continue to refer to it as a long term goal to be pursued when necessary conditions were achieved? The answer has two parts. First, not everyone at home or abroad agreed with this assessment, and certainly the industrial democracies did not always lead in all areas of advanced weaponry. Second, some actually do put a premium on limiting the U.S. American technological prowess was a target not only of the Soviet Union during the Cold War, but also of some other states that feared or resented the United States and/or the other nuclear weapons states. In some other cases, states appeared to be exploiting American reluctance to finalize a CTB as pretext to justify their own lack of restraint, and one frequently hears the argument that a CTBT will call their bluff. Unfortunately, I fear these states can create pretexts faster than we can negotiate them away or buy them off. Still others do see American technological advances as the source of most arms races. I should note that all of the arguments against the American nuclear deterrent that one has heard over the years are now

being made about American advanced conventional capability and even so-called non-lethal weapons.

The more compelling reason that the United States never walked away from the CTBT as a long term goal, however, was nonproliferation. Yet, even here, there were serious concerns about the impact of the CTBT. All but a handful of states (Cuba, India, Israel, Pakistan primarily) are already parties to the Nonproliferation Treaty. Except for the five nuclear weapons states these parties are obligated not to have nuclear weapons programs and thus should not have nuclear weapons to test. The main thrust of the CTBT actually involves very few states. Often, the CTB was seen in the West as a half way house for those states into the NPT. The problem is that some in those states saw the CTBT as an alternative regime to the NPT, one based on a more egalitarian principle under which all parties would be free to have nuclear weapons. They just couldn't test them.

The danger is that the CTBT then becomes a halfway house out of the NPT, or at least a less restrictive alternative approach to nonproliferation. This need not happen, but it could if we are not careful. Already it has become common in public discussion to speak of proliferation as having occurred only after a state has tested its nuclear weapons. This erosion of standards is very dangerous and again reflects the mistaken belief that proliferators must always test their weapons to have confidence in them. This involves more mirror imaging than is warranted. Their needs are not the same as ours. Also, as technology such as supercomputing advances and spreads, more and more states will be able to have confidence in more and more nuclear weapons capability without testing. To address these problems, the United States and like-minded states must work to address fundamental regional security concerns. Above all, it must avoid the neo-Kellogg-Briandism that would have us substitute grandiose, global pledges for the hard work of creating the conditions for a safer world by directly engaging states and regions of concern. Already we have seen in the context of the CTB, a worsening of the situation in South Asia.

Still, it would be wrong to say that the CTBT only relates to a few. Many of the parties to the NPT have said that their commitment to remain in the treaty is related to the implementation by the nuclear weapons states of Article VI of the treaty. The NPT commits the nuclear weapons states to a cessation of the nuclear arms race and commits all parties to work toward general and complete disarmament. Most of these states have taken the position that achievement of a CTBT is required under Article VI, but most have said that Article VI also requires the ultimate elimination of all nuclear weapons themselves. And the official policy of the United States remains that this too is an ultimate goal.

How does the United States reconcile this view with its view that the nuclear umbrella and security guarantee it provides to key allies also is necessary for nonproliferation. The answer always has been that the United States will not give up its nuclear weapons until the conditions have actually been created in which they are no longer necessary. To do otherwise, would result in powerful pressures for nuclear proliferation. Half the world's population lives in countries that have nuclear weapons, and if we do not deal the legitimate security concerns of the others, more states will seek their own WMD programs. If a CTBT were to shatter confidence in safety, security, or reliability of the American nuclear umbrella, they may do the same. Yet if we invoke Safeguard F, involving the supreme national interest clause, we may provoke or legitimize similar acts. This safeguard carries almost the entire weight of the argument for this CTBT, yet it puts the United States in a "Damned if you do; damned if you don't" situation with respect to nonproliferation, especially if there are states simply looking for a pretext.

Mr. Chairman, it is my personal view that the arms control arguments for a zero-yield CTBT are not compelling, and that the nonproliferation impact of any CTBT can be very uncertain and involve foreseeable dangers as well as unintended consequences. A better way to proceed is a step by step process in which constraints are related to advances in verification, advances in a validated stockpile stewardship program, development of an appropriate weapons stockpile for a post-Cold War and testing limited environment, and advances in global and regional security. All of this is about why we didn't want to be where we are now.

But we are here now. What should be done now? With or without this treaty, we should continue to work with other nations, but most particularly with countries of concern to advance a more cooperative, but realistic security relationship. With or without this treaty, we should continue to address verification and compliance challenges, including those associated with nuclear testing restraints. With or without this treaty, we should exploit a vigorous stockpile stewardship program so that we can have confidence in our deterrent while also demonstrating the maximum restraint possible. With or without this treaty, we must continue to develop and implement a more coherent, bipartisan strategy for building a safer world.

If this treaty were time limited, were not zero yield, provided restraints at more verifiable levels, provided more clearly for the legitimacy of further testing (if and when it is needed), were not so prone to ever more restrictive interpretation down the road, and if conditions were such that the stated nonproliferation objectives will actually be achieved, then the debate would not be so intense. Unfortunately, this treaty, signed already by the United States is none of these things, and there is no easy way to fix it.

To approve this treaty may undermine years of accomplishments in arms control and nonproliferation. Yet, expectations about this very treaty have been built up around the world and here at home. The case for this treaty is weak, but, unfortunately, the explanations for why the conditions for this treaty do not exist have also not been made even to our allies. These explanations are only now finally being made to our own citizens. It is one thing to say we never should have gotten into this position. It is another thing to make a worse hash of it. The challenge to this Committee, and to the Executive Branch, is to find a way to get American nonproliferation strategy back on sound footing such that it earns bipartisan support and provides the U.S. leadership necessary in the global arena.

Senator BROWNBACK. Thank you. I just came in. Mr. Wade, are you up? Thank you very much, and thank you all for hanging in here through a long hearing. It is a very important hearing, and we want to hear your testimony. I would hope you would put it forward actually in a summary fashion and really get to the heart of what you are about on it. And we will have your full statement in the record. I just think that might be better for all of us. You have heard a lot of testimony here today. Just get right at what you think the key points are. Mr. Wade.

STATEMENT OF TROY E. WADE, U.S. DEPARTMENT OF ENERGY (RETIRED), NEVADA ALLIANCE FOR DEFENSE, ENERGY AND BUSINESS, LAS VEGAS, NV

Mr. WADE. Thank you, Mr. Chairman. I will be pleased to summarize. By way of background, I have spent more than 30 years directly involved in the nuclear weapons programs of this country, with most of my career associated with nuclear testing. My last official assignment was as the Assistant Secretary of Energy for Defense Programs at the end of the Reagan administration. Since my retirement in 1989, I have continued to support the defense interest of this country and have worked to assure that the issues with which I am familiar are properly considered.

I am part of a rapidly diminishing number of people who have witnessed the awesome force of an atmospheric nuclear test. And therefore I can comfortably categorize myself as one who has spent his entire career working on a program that would bring strength to the U.S. deterrent, but at the same time I am a perfect example of the aging, not only of the nuclear weapons themselves, but much more importantly, the people who have designed and tested and manufactured them.

Given my background in testing, I am particularly concerned about several things. For example, I know from firsthand experience that nuclear weapons are not like artillery shells. You can not store them in a Butler building and then get them whenever the exigencies of the situation prompt you to do so. Nuclear weapons are very complicated assemblies that require continued vigilance to assure reliability and safety. It is, therefore, a first order principle that nuclear weapons that are now expected to be available in the enduring stockpile for much longer than was contemplated by the designers will require enhanced vigilance to continue to ensure

safety and reliability. I have been, and will continue to be, a supporter of stockpile stewardship, but I am a supporter only because I believe it is a way to develop the computational capability to assure the annual certification process for warheads that have not changed or for which there is no apparent change. For nuclear weapons that do not fit that category, stockpile stewardship is merely, as we say in Nevada, a crap shoot.

Nuclear testing has always been the tool necessary to maintain with high confidence the reliability and safety of the stockpile. I believe this treaty would remove the principal tool from the toolchest of those responsible for assuring safety and reliability. We have heard many analogies today about the effects of this treaty on warhead safety and reliability. I would like, Mr. Chairman, to use my own analogy. Maintaining the nuclear deterrent of the United States without permitting needed testing is like requiring the local ambulance service to guarantee 99 percent reliability anytime the ambulance is requested, but with a provision that the ambulance is never to be started until the call comes. I believe this is a patently absurd premise.

I believe there are at least three reasons that the U.S. might need to conduct a nuclear test. First, a requirement to do a test that would respond in a political sense to a test conducted by another country, and I do not believe this to be a high probability event at all. Second, a requirement to do a test, or two, or three, that would need to be conducted to respond to a new, clear, military requirement, such as deeply buried hard targets. I believe this to be likely over the next couple of decades. Third, a requirement to do a test, or two, or three, that would be necessary to assure that a problem discovered in the enduring stockpile had been successfully resolved, and that the safety and reliability of the subject warhead was again deemed satisfactory. I believe, based on my personal experience, that this is a very high probability event. Are we prepared to conduct a nuclear test should we develop a problem in the enduring stockpile? Are we prepared to comply with proposed safeguard F? I am distressed to have to report to this committee that in my opinion, our capability to conduct a test is eroding rapidly. Let me give you my views for the reasons.

First, there is no agreement between Congress and the administration about what constitutes the capability to resume nuclear testing. Congress views the plans presented by the administration as if they were plans developed by a fire station waiting for a very low probability fire and, therefore, prohibitively expensive. The administration exacerbates this view by being unable to define the most basic requirements needed to conduct a nuclear test.

The result is an impasse. Congress is seeking the cheapest option, while the administration and the national laboratories quibble over what must be done, and in what priority it must be done. As a result, we are losing the people, both weapons designers and field operations people, that are trained to safely conduct a nuclear test, and we are also losing the certification and maintenance of the instrumentation and equipment that is necessary to conduct a nuclear test.

In summary, Mr. Chairman, my years of experience and dedication to this program tell me that this treaty, as it is now presented

to this committee, is dangerous. It is unverifiable, it may or may not further the nonproliferation goals of the U.S., and most important to me, it has an adverse effect on assuring the continued safety and reliability of the nuclear deterrent. Mr. Chairman, that concludes my remarks. My full statement will be submitted for the record.

[The prepared statement of Mr. Wade follows:]

PREPARED STATEMENT OF TROY E. WADE

Mr. Chairman, members of the committee:

Thank you for this opportunity to testify on behalf of my opposition to the ratification of the Comprehensive Test Ban Treaty as it is currently written. As submitted, it is my opinion that it presents to this committee and to the full body of the Senate a flawed set of logic.

By way of background, I have spent more than thirty years directly involved in the nuclear weapons programs of this country, with most of my career associated with nuclear testing. Since my retirement in 1989, I have continued to support the defense interests of the country and have worked to assure that the issues with which I am familiar are properly considered.

I am part of a rapidly diminishing number of people who have witnessed the awesome force of an atmospheric nuclear test and, therefore, I can comfortably categorize myself as one who has spent his entire career working on a program that would bring strength to the U.S. defense but, at the same time, one who has also prayed that a nuclear weapon would never need to be used again.

Treaties have always been a part of the nuclear weapons program, and I have participated in all of them, noting that all have been driven by international pressures. Among the most important to the nation are the Limited Test Ban Treaty in 1963, followed in 1974 by the Threshold Test Ban Treaty.

Both of those treaties were ratified because there was reasonable assurance that the treaties could be verified.

As the national commitment to the Comprehensive Test Ban Treaty moved forward during the Reagan years, this nation participated in a joint program with the Soviet Union, called the Joint Verification Experiment (JVE), to determine each nation's capability to monitor a Comprehensive Test Ban Treaty. The JVE's were very successful in that they demonstrated to both nuclear powers that one could successfully instrument a test to assure that it did not exceed the nuclear yields specified by the treaty requirements. Lost in the rhetoric is the fact that the JVE's did nothing to assure anyone that low yield nuclear tests could be routinely and accurately detected. Given the technical facts known at the time, it is remarkable that the U.S. or any of its close allies would agree to a zero-yield provision in the proposed treaty. As the committee knows, recent reports from the CIA continue to highlight our inability to verify whether or not low-yield nuclear tests have been conducted by Russia.

Given my background in testing, I am particularly concerned about several things. For example, I know from firsthand experience that nuclear weapons are not like artillery shells. You cannot store them in a Butler building on the back forty and go get them whenever the exigencies of the situation prompt you to do so. Nuclear weapons are very complicated assemblies that require continued vigilance to assure reliability and safety. It is a first order principal that nuclear weapons that are now expected to be available in the enduring stockpile for much longer than was contemplated by the designers will require enhanced vigilance to continue to assure safety and reliability. I have been, and will continue to be, a supporter of stockpile stewardship, but I am a supporter only because I believe it is a way to develop the computational capability to assure the annual certification process for warheads that have not changed, or for which there is no apparent change. For nuclear weapons that do not fit that category, stockpile stewardship is merely a crap shoot. Nuclear testing has always been the tool necessary to maintain, with high confidence, the reliability and safety of the stockpile. In fact, President George Bush must have believed as I do when he said, and I quote, "the requirement to maintain and improve the safety of U.S. forces necessitates continued nuclear testing for these purposes, albeit at a modest level, for the foreseeable future."

This treaty would remove the principal "tool" from the tool chest of those responsible for assuring stockpile safety and reliability. To use a simple analogy, if the chair permits, maintaining the nuclear deterrent of the U.S. without permitting needed testing is like requiring the local ambulance service to guarantee 99% reli-

ability anytime the ambulance is requested, but with a provision that the ambulance is never to be started until the call comes. This is a patently absurd premise.

Allow me to get very specific about nuclear testing. When President Clinton forwarded the current CTBT to Congress, he assured the Congress that he had mandated that the capability to resume nuclear testing would be maintained. It is my opinion that is currently not the case.

I believe that there are at least three reasons that the U.S. might need to conduct a nuclear test.

- First, a requirement to do a test that would respond, in a political sense, to a test conducted by another country. I do not believe this is a high probability event at all.
- Second, a requirement to do a test (or two or three) that would need to be conducted to respond to a new, clear military requirement, such as deeply-buried hard targets. I believe this to be likely over the next couple of decades.
- Third, a requirement to do a test (or two or three) that would be necessary to assure that a problem discovered in the enduring stockpile had been successfully resolved and that the safety and reliability of the subject warhead was again deemed satisfactory. I believe, based upon my personal experience, that this is a very high probability event.

Are we prepared to conduct a nuclear test should we develop a problem in the enduring stockpile, or for any other reason? I am distressed to have to report to this committee that our capability to conduct a test is eroding rapidly. Let me give you my view of the reasons that this is the case.

First, there is no agreement between Congress and the administration about what constitutes the "capability to resume nuclear testing." Congress views the plans presented by the administration as if they were plans developed by a fire station waiting for a very low probability fire and, therefore, are prohibitively expensive. The administration exacerbates this view by being unable to define the most basic requirements needed to conduct a nuclear test.

The result is an impasse. Congress is seeking the cheapest option while the administration and the national laboratories quibble over what must be done and in what priority it must be done. As a result, we are losing the people (both weapons designers and field operations personnel) that are trained to safely conduct a nuclear test, and we are also losing the certification and maintenance of the instrumentation and equipment that is necessary to conduct a nuclear test.

Until issues like these are resolved, ratification of a treaty that prevents nuclear testing puts our system and our nation at unnecessary risk.

In summary, Mr. Chairman, my 31 years of service and dedication to this program tell me that this treaty, as it is now presented to this committee and to the Senate of the United States, is dangerous. It is unverifiable, it clearly does nothing concrete to further the non-proliferation goals of the U.S., and most important to me, it has an adverse effect on assuring the continued safety and reliability of the nuclear deterrent.

I urge this committee and the full body of the Senate to reject this treaty as it has been submitted and to require that the administration move expeditiously to develop a new Comprehensive Test Ban Treaty that will lead to the desired goals of verification while also protecting all of our options in the event of a national emergency.

Mr. Chairman, that concludes my remarks. I appreciate the opportunity to testify before this prestigious committee and stand ready to respond to any questions you or the committee may deem appropriate.

Thank you very much.

Senator BIDEN. Thank you very much.

Dr. Garwin, we will hear your statement now. And then we will have questions for all of you.

STATEMENT OF RICHARD L. GARWIN, PH.D., SENIOR FELLOW FOR SCIENCE AND TECHNOLOGY, COUNCIL ON FOREIGN RELATIONS, NEW YORK, NY

Dr. GARWIN. Good evening. Thanks for the opportunity to testify in support of the Comprehensive Test Ban Treaty that has been before the Senate for 2 years.

I will abbreviate and submit my full statement for the record.

Since 1950, I have been involved in the Nation's nuclear weapons establishment, contributing to the development and testing of fission weapons and to the creation of the first thermonuclear weapons. I speak for myself alone.

Last year I was a member of the Rumsfeld Commission to assess the ballistic missile threat to the United States. In 1996, I received the Foreign Intelligence Community Award for Scientific Intelligence. And that same year, from the President and the Department of Energy, the Enrico Fermi Award for my work with nuclear weapons.

Complex technical issues should not be allowed to obscure the important conclusions that I state here up front and that I believe follow from a balanced assessment. First, in assessing the merits of the CTBT, it is essential to bear the difference in mind between fission weapons of the Hiroshima/Nagasaki variety and thermonuclear weapons which are used on all deployed U.S., Russian and Chinese strategic nuclear weapons.

The CTBT can be verified with sufficient confidence to prevent any proliferator from developing thermonuclear weapons, whether he already possesses fission weapons or develops such weapons clandestinely.

Third, while tests with yields vastly smaller than Hiroshima may evade detection, such tests would be useless to Russia and China, and very difficult to use for confirming the validity of clandestinely developed fission weapons.

Fourth, if secret information regarding thermonuclear weapons has been acquired by others or may be so acquired in the future, as has been alleged in regard to China, this information cannot be turned into a deployable weapon without tests forbidden by the CTBT.

Fifth, the U.S. does not need tests banned by the CTBT to maintain full confidence in its weapons stockpile. The vast majority of components in a nuclear weapon can be examined and tested and upgraded without nuclear explosions. The nuclear, so-called, physics package itself can be remanufactured to original specifications should surveillance reveal deterioration. The stockpile stewardship program will further enhance our high confidence in our stockpile, which is now certified each year by the weapon builders, together with the military who will have to use the weapons.

Sixth, given that nuclear proliferation is probably the most serious threat to the national security, and given the confidence that our own deterrent will be fully maintained under the CTBT, it is totally clear that the United States will run fewer dangers with the CTBT in force than without it.

The costs to the United States of a CTBT include constraining the United States from testing nuclear weapons. We must frankly face that as a cost. The benefits come from constraining other countries from testing nuclear weapons. So let us first look at the benefits.

The greatest benefit arises from the contribution to preventing proliferation of nuclear weapons, both directly, by preventing nuclear tests and indirectly, by keeping nations on board the non-proliferation treaty. The United States does not want additional states to have nuclear weapons, and the members of the NPT do

not either. We will not have these nations enthusiastically supporting the NPT if we go on with testing.

It is possible to build simple nuclear weapons without nuclear explosion tests. But there will always be a nagging doubt whether or how well they perform. The Hiroshima and Nagasaki bombs each weighed about 9,000 pounds, with a yield of 15 to 20 kilotons. The Hiroshima bomb was not tested before its use. It used a gun assembly of 60 kilograms of enriched uranium. The Nagasaki bomb was tested 3 weeks beforehand in the New Mexico desert. It contained 6 kilograms of plutonium.

But the point is that these must be compared with a two-stage thermonuclear bomb, tested in 1957, 12 years later, that weighed some 400 pounds, with a yield of 74 kilotons. Its diameter was a mere 12 inches, with a length of some 42 inches. That is what you can do by testing. That is what other people cannot do without testing.

A CTBT that was respected would make a big difference in the threat that could face the United States or our allies, even if nations overtly or clandestinely pursue nuclear weaponry without explosive tests. The two-stage 1957 weapons would greatly increase the destructive power that can be wielded by new nuclear states such as India and Pakistan. And I take Ambassadors Oakley's and Wisner's comments about the likelihood of testing and further expansion of the nuclear arsenals in India and Pakistan if a CTBT is not ratified.

The CTBT bans a nuclear explosion of any size. It is a zero threshold agreement. Can we be certain that a nation has not tested in this vast range between zero and the magnitude of tests that would be required to gain a significant confidence in an approach to thermonuclear weaponry, say 10 kilotons? No, we cannot be sure. But the utility of such tests, the minimal tests, in a weapons program has been thoroughly explored and found to be just that—minimal.

I recall the August 1995 report of the JASON group, chaired by Dr. Sidney Drell, of which I was a coauthor. Conclusion 6 of that study refers specifically to a nuclear weapon test that would involve full yield of a fission primary and some ignition of the thermonuclear secondary, and states that such tests, to be useful, would generate nuclear yields in excess of approximately 10 kilotons. That is clearly verifiable by the CTBT's International Monitoring System, with its seismic, hydroacoustic and infrasound sensors and its detectors of radioactive gases and particles.

Those conclusions resulted from a detailed classified analysis of the more than 1,000 U.S. nuclear tests. And the conclusions were supported unanimously by the authors of the study, which included four experienced nuclear weapon designers from the nuclear weapon laboratories.

Now, a proliferant country might well want to acquire fission weapons of 5 kiloton yields, a third the size of the Hiroshima bomb. But the chance of detonating such a weapon undetected is small. The IMS would have a good probability of detecting a nuclear explosion anywhere in the world at a level of 1 kiloton. And in many portions of the world, the detectability is much better. For example, on September 23, 1999, the background noise in seismic arrays in

the Scandinavian region were such that a test on the order of 1 ton, not 1 kiloton, could have been detected at Novaya Zemlya.

Hydronuclear tests are banned under the CTBT. The U.S. conducted dozens of them with an intended energy release less than 4 pounds of high explosives, not 1 ton, or 1 kiloton, but a thousandth of a ton—4 pounds. It is clearly impossible seismically to distinguish a test that may have had 200 pounds of high explosive from a test with 200 pounds of high explosive and 1 pound of nuclear yield.

The 1995 JASON nuclear testing study judged that there was little to be learned from such a test of a yield 10 million times lower than that of the bombs that destroyed Hiroshima and Nagasaki. Such major changes would need to be made in a full-scale nuclear explosive to produce such a small yield that information available from a hydronuclear test would be of minor value in the development of a substantial fission weapon. And that laid the basis for a zero yield, zero threshold, CTBT. We just found no utility for hydronuclear tests.

Russian nuclear weapon experts have expressed interest in fission weapons with yields no bigger than a few tons, slightly bigger than the 2-ton bombs that we routinely dropped from our aircraft. These might be built without testing, or might be tested unobserved by U.S. sensors with or without a CTBT. In no case would the U.S. react by testing its own nuclear weapons. And the inhibition posed by a CTBT on a Russia that wishes to remain engaged with the rest of the world would be substantial. The possibility of Russian programs of this type is not a valid argument against the CTBT.

Not having a CTBT would give a green light to Russia to develop those weapons and fully test them, and many others. In other words, one can cheat on the CTBT without being discovered by the International Monitoring System, but to what purpose? Useful national security information would not be acquired, and the bragging rights are not worth much if you cannot tell anyone.

For instance, a clandestine test cannot be used to intimidate other states. Beyond the International Monitoring System, the United States maintains national means, ranging from human agents to communications intelligence to sensors other than those included in the IMS. I am confident that the CTBT can be adequately verified. This means that experimental validation by nuclear explosion testing cannot be accomplished by a state that is party to the CTBT.

Now, can we maintain our nuclear weapons safe and reliable under a CTBT? Yes. Our review of U.S. nuclear tests and of defects developed in stockpiled weapons revealed many defects detected in the routine surveillance process—not by nuclear explosion tests. Defects observed by nuclear explosion tests were associated with weapons that have been put into the stockpile without the normal development testing and without a production verification test. Today we have no such weapons, and we will have none in the future.

Senator BIDEN. None in the stockpile today?

Dr. GARWIN. None in the stockpile today have not been fully tested. They have all been fully tested. All weapons in the enduring stockpile have been fully tested.

Some deficiencies identified by surveillance were actually eliminated by substituting a different warhead or design that required nuclear testing. But that was an option, not a necessity.

At present, and for the foreseeable future, a reliable and safe U.S. nuclear weapons stockpile is essential to the security of the United States, its allies and to peaceful nations of the world. We need to understand whether U.S. nuclear weapons can be maintained reliable and safe for 10 years or 20 years or 50 years without nuclear testing. That is the \$45 billion 10-year program, to provide assessment and understanding of the state of the stockpile and to remedy deficiencies as they are detected.

The analogy with the automobile is that of the 4,000 or so individual parts of a modern U.S. nuclear weapon. Most can be thoroughly tested without nuclear explosions, and many are not even involved in a test explosion. Thus, batteries, timing and fusing systems and most of the weapon itself can be assessed and improved to the state-of-the-art using modern technology when warranted by the reduction in cost in the long run to compensate the investment in the short run. That is no different from any other modernization program.

But under a CTBT, the explosive-driven plutonium primary cannot be tested to nuclear yield, and neither can the secondary explosive that is ignited by the flood of x rays from the primary explosion. Instead, the United States has an assessment program in which each year 11 examples of each type of warhead in the inventory are dismantled and exhaustively monitored. Of the 11, one is totally disassembled, and the interior of the primary and secondary inspected for aging, corrosion and the like.

Signs of aging may eventually force the remanufacture of these parts. If they are remanufactured to the same specifications as they were initially produced, they will be as good as the day they were first made. This can be done any number of times, and is the basis for my confidence in the future stockpile.

We now have a much better understanding of the aging of plutonium than we did previously. It seems to be benign. And this knowledge has led to a belief that the plutonium pit will survive 50 years or more. But if it does not, remanufacture will make it good as new.

We need not only reassessment, but the remanufacturing facility. The need for the facility has nothing to do with the CTBT. It is neither more nor less necessary under a CTBT than in a regime in which the United States will still test occasionally.

It is interesting that whether we test or we do not test, no missile that will be fired in war, no nuclear weapon that would be used in extremis would have been tested. Its brother would have been tested. Its sister would have been tested. It would not have been tested.

The U.S. laboratories, under the CTBT, will maintain weapons safe and reliable by the stockpile stewardship program, but they will also maintain and improve the capability to design and build nuclear weapons. It is clear that this capability could not be exer-

cised in the form of newly produced weapons under a CTBT, but should the test ban regime ever collapse, it would avoid the delay of many years before new designed nuclear weapons could be produced.

Now, let me give you what I believe is a balanced assessment, a summary. The nonproliferation arms control benefits to the U.S. of a Comprehensive Test Ban Treaty are substantial. The adherence of other nations to the NPT and to the CTBT is fundamentally influenced by U.S. ratification of the CTBT.

A party could conduct tiny nuclear tests without being detected by the treaty monitoring system. But tests in the hydronuclear range, releasing a millionth of the energy of a Hiroshima bomb will provide little useful knowledge. Tests releasing 100 tons—that is, 1 percent of the Hiroshima yield—might sometimes be missed by the monitoring system, but would often be detected and located by other means. They, too, would have little value in the development of nuclear weapons.

U.S. nuclear weapons will be maintained reliable and safe under a CTBT thanks to the stockpile stewardship programs for assessment and remanufacture.

Last but not least among the six safeguards the administration has announced is the explicit readiness to invoke the supreme national interest clause should the need arise as a result of unanticipated technical problems in the enduring stockpile of nuclear weapons that affect a key portion of that stockpile.

On the basis of my experience in the nuclear weapons program, I agree with those U.S. military leaders who have reviewed the benefits and costs to U.S. security from a CTBT and strongly support the treaty. Our national security will be improved by ratification and impaired by further delay.

These military leaders had access to all the facts, took the time, and used a formal process to ensure that all views were considered. I feel it is thus greatly in our national security interest to ratify the CTBT now. And I would be pleased to answer questions.

[The prepared statement of Dr. Garwin follows:]

PREPARED STATEMENT OF DR. RICHARD L. GARWIN

INTRODUCTION

Good afternoon. Thank you for the opportunity to testify in support of the Comprehensive Test Ban Treaty.

I am Richard L. Garwin, Philip D. Reed Senior Fellow for Science and Technology at the Council on Foreign Relations. I am also IBM Fellow Emeritus at the Thomas J. Watson Research Center of the IBM Corporation. I chair the Arms Control and Nonproliferation Advisory Board to the Secretary of State. In addition, I am a member of the JASON group of consultants to the U.S. government, and have participated in several of the JASON studies for the Department of Energy on stockpile stewardship. Since 1950 I have been involved with the nation's nuclear weapons establishment, having contributed to the development and testing of fission weapons and to the creation of the first thermonuclear weapons. Most of this involvement has been at the Los Alamos National Laboratory. I am currently a consultant to Sandia National Laboratories. Nevertheless, in my testimony I speak only for myself. In 1998 I was a member of the Rumsfeld Commission to Assess the Ballistic Missile Threat to the United States. In 1996 I received from the U.S. foreign intelligence community the R.V. Jones Award for Scientific Intelligence; and also in 1996 I received from the President and the Department of Energy the Enrico Fermi Award for my work with nuclear weapons.

THE BOTTOM LINE.

Complex technical issues should not be allowed to obscure the important conclusions that I state here, up front, and that I believe follow from a balanced assessment:

1. In assessing the merits of the CTBT it is essential to bear the difference in mind between fission weapons of the Hiroshima-Nagasaki variety and thermonuclear weapons which are used on all deployed U.S., Russian and Chinese strategic nuclear weapons.
2. The CTBT can be verified with sufficient confidence to prevent any proliferator from developing thermonuclear weapons whether he already possesses fission weapons or develops such weapons clandestinely.
3. While tests with yields vastly smaller than Hiroshima may evade detection, such tests would be useless to Russia and China, and very difficult to use for confirming the validity of a clandestinely developed fission weapon.
4. If secret information regarding thermonuclear weapons has been acquired by others, or may be so acquired in the future, as has been alleged in regard to China, this information cannot be turned into a deployable weapon without tests forbidden by the CTBT.
5. The U.S. does not need tests banned by the CTBT to maintain full confidence in its weapons stockpile. The vast majority of components in a nuclear weapon can be examined and tested and upgraded without nuclear explosions. The nuclear (or physics) package itself can be remanufactured to original specifications should surveillance reveal deterioration. The stockpile stewardship program will further enhance our high confidence in our stockpile, which is now certified each year by the weapon builders, together with the military who will have to use the weapons.
6. Given that nuclear proliferation is probably the most serious threat to the national security, and given the confidence that our own deterrent will be fully maintained under the CTBT, it is clear—totally clear—that the United States will run fewer dangers with the CTBT in force than without it.

WHY A TREATY?

We are better off with a test ban than without it. Of that there can be no doubt. Naturally, any treaty or contract will have both benefits and costs to any of the parties. Here we are concerned with the benefits and costs to the United States. If one looked only at the costs, and imagined them as the total effect of the Treaty, one would never consider such a deal.

The costs to the United States include constraining the United States from testing nuclear weapons. The benefits come from constraining other countries from testing nuclear weapons. So let's look first at the benefits. The greatest benefit of the CTBT arises from its contribution to preventing the proliferation of nuclear weapons. It does this directly by preventing nuclear tests and indirectly by keeping nations on board the Nonproliferation Treaty (NPT). The United States does not want additional states to have nuclear weapons, and the members of the NPT don't either.

It is possible to build simple nuclear weapons without nuclear explosion tests, but there will always be a nagging doubt whether or how well they will perform. The Hiroshima and Nagasaki bombs each weighed about 9000 pounds, with a yield of 15 to 20 kilotons. The Hiroshima bomb used artillery-gun assembly of 60 kilograms of enriched uranium, which was not tested before its use. The Nagasaki bomb, tested three weeks beforehand in the New Mexico desert, contained some 6 kilograms of plutonium. Compare these weapons with a two-stage thermonuclear bomb tested in 1957 that weighed some 400 lbs with a yield of 74 kilotons; its diameter was a mere 12 inches, with a length of some 42 inches.

Without nuclear tests of substantial yield, it is difficult to build compact and light fission weapons and essentially impossible to have any confidence in a large-yield two-stage thermonuclear weapon or hydrogen bomb, which can readily be made in the megaton class. Furthermore, even in the yield range accessible to fission weapons, thermonuclear weapons are attractive because of their economy of fissile material, their compact size, and their improved safety. Just for example, a pure fission weapon, which is the best a sophisticated proliferator could do without verifiable testing, of 200 kilotons yield would require some 60 kg of plutonium or U-235. And the chemical explosive might weigh 4000 to 8000 lbs. That amount of fissile material would suffice for 10 thermonuclear weapons, each of which could be in the megaton class and weigh less than 1000 lbs. However, such H-bomb type weapons would require testing that would be readily detected and would therefore be prevented by

the CTBT. This limits greatly the destructive power that can be wielded by newly nuclear states such as India and Pakistan.

So a CTBT that was respected would make a big difference in the threat that could face the United States or our allies, even if nations overtly or clandestinely pursue nuclear weaponry without explosive tests.

The CTBT bans any nuclear explosion of any size—it is a “zero threshold” agreement. Can one be certain that a nation has not tested in the vast range between zero and the magnitude of test that would be required to gain significant confidence in an approach to thermonuclear weaponry—say, 10 kilotons? No, but the utility of such tests to a weapons program has been thoroughly explored and found to be minimal.

First, I recall the August 3, 1995 report of JASON chaired by Dr. Sidney Drell, of which I was a co-author. Conclusion 6 of that study refers to a nuclear weapon test that would involve full yield of the fission primary and some ignition of the thermonuclear secondary, and that such tests, to be useful, would “generate nuclear yields in excess of approximately 10 kilotons.” That is clearly verifiable by the CTBT’s International Monitoring System (IMS), with its seismic, hydroacoustic, and infrasound sensors, and its detectors of radioactive gases and particles.

These Conclusions resulted from a detailed classified analysis of the more than 1000 nuclear tests, and they were supported unanimously by the authors of the study, including four experienced nuclear weapon designers from U.S. nuclear weapon laboratories.

A proliferant country might well want to acquire fission weapons of 5 kiloton yield, but the chance of detonating such a weapon undetected is small. The International Monitoring System (IMS) will have a good probability of detecting a nuclear explosion anywhere in the world—underground, underwater, or in the atmosphere at a level of 1 kiloton. And in many portions of the world the detectability is much better. For example, on September 23, 1999, the background noise in seismic arrays in the Scandinavian region was such that a test on the order of 1 ton (not 1 kiloton) could have been detected at Novaya Zemlya.

The CTBT bans explosive tests that release any amount of nuclear energy. The United States conducted some scores of so-called hydronuclear tests with an intended energy release less than 4 lbs. of high explosive equivalent. These are banned under the CTBT; they would very likely not be detected by the International Monitoring System. It is clearly impossible seismically to distinguish a test that may have had 200 lbs. of high explosive from a test with 200 lbs. of high explosive and 1 lb. of nuclear yield. The 1995 JASON Nuclear Testing study judged that there was little to be learned from such a test of yield 10 million times lower than that of the bombs that destroyed Hiroshima and Nagasaki. Such major changes would need to be made in a full-scale nuclear explosive to produce such a small yield that information available from the hydronuclear test would be of minor value in the development of a substantial fission weapon.

Russian nuclear weapons experts have expressed interest in fission weapons with yields no bigger than a few tons. These might be built without testing, or might be tested unobserved by U.S. sensors, with or without a CTBT. In no case would the U.S. react by testing its own nuclear weapons, and the inhibition posed by a CTBT on a Russia that wishes to remain engaged with the rest of the world would be substantial. The possibility of Russian programs of this type is not a valid argument against the CTBT.

In other words, one can cheat on the CTBT without being discovered by the International Monitoring System, but to what end? Useful national security information would not be acquired, and the bragging rights are not worth much if one can’t tell anyone. For instance, a clandestine test cannot be used to intimidate other states.

ADDITIONAL MEANS TO DETECT VIOLATIONS

In addition to the International Monitoring System, the United States will maintain national means ranging from human agents to communications intelligence to sensors other than those included in the IMS. Furthermore, there are completely open and unclassified sensors such as research seismometers that can augment and in many cases greatly improve the sensitivity of the IMS.

I am confident that the CTBT can be adequately verified; this means that experimental validation by nuclear explosion testing cannot be accomplished by a state that is party to the CTBT.

CAN THE U.S. MAINTAIN ITS NUCLEAR WEAPONS SAFE AND RELIABLE UNDER A CTBT?

Our review of the U.S. nuclear tests and of defects discovered in stockpile weapons revealed many defects that were detected in the routine surveillance process—

i.e., not by nuclear explosion tests. Defects observed by nuclear explosion tests were associated with weapons that had been put into the stockpile without the normal development testing and a production verification test. Today we have no such weapons; and we will have none in the future. All weapons in the enduring stockpile have been fully tested.

Some deficiencies identified by surveillance were eliminated by substituting a different warhead or design that required nuclear testing, but that was an option—not a necessity.

This analysis of our own stockpile and test record underscores the importance of explosive testing at an assuredly detectable level to a proliferator.

At present and for the foreseeable future, a reliable and safe U.S. nuclear weapons stockpile is essential to the security of the United States, its allies, and to peaceful nations of the world. It is important to understand whether U.S. nuclear weapons can be maintained reliable and safe for 10 years or 20 years or 50 years, without nuclear testing. To this end, the Department of Energy is spending \$4.5 billion annually on the Stockpile Stewardship Program, to provide assessment and understanding of the state of the stockpile and to remedy deficiencies as they are detected. Of the 4000 or so individual parts of a modern U.S. nuclear weapon, most can be thoroughly tested without nuclear explosions and many are not even involved in a test explosion. Thus, batteries, timing and fuzing systems, and most of the weapon itself can be assessed and improved to the state-of-the-art, using modern technology when it is warranted by the reduction in cost in the long run to compensate the investment in the short run. This is no different from any other modernization program. But under a CTBT, the explosive-driven plutonium primary cannot be tested to nuclear yield, and neither can the secondary explosive that is ignited by the flood of x rays from the primary explosion.

Instead, the United States has an assessment program, in which each year 11 examples of each type of warhead in the inventory are dismantled and exhaustively monitored. Of the 11, one is totally disassembled and the interior of the primary and secondary inspected for aging, corrosion, and the like.

Eventually, signs of aging may force the remanufacture of these parts; if they are remanufactured to the same specifications as they were initially produced, they will be as good as the day they were first made. This can be done any number of times, and is the basis for my confidence in the future stockpile. As a result of the Stockpile Stewardship Program over the last four years or so, we have a much better understanding of the aging of plutonium than we did previously. It seems to be benign, and this knowledge has led to a belief that the plutonium pit will survive for 50 years or more. But if it doesn't, remanufacture will make it "good as new."

We need to have not only the assessment but the remanufacturing facility; the need for that facility has nothing to do with the CTBT. It is neither more nor less necessary under a CTBT than in a regime in which the United States might still test occasionally.

The U.S. laboratories under the CTBT will maintain weapons safe and reliable by the Stockpile Stewardship Program, but they will also maintain and improve the capability to design and build nuclear weapons. It is clear that this capability could not be exercised under a CTBT in the form of newly produced weapons, but should the CTBT regime ever collapse, it would avoid a delay of many years before new-design nuclear weapons could be produced.

A BALANCED ASSESSMENT

The nonproliferation and arms control benefits to the U.S. of a CTBT are substantial; the adherence of other nations to the Nonproliferation Treaty and to the CTBT is fundamentally influenced by U.S. ratification of the CTBT. A Party could conduct tiny nuclear tests without being detected by the Treaty's monitoring system, but tests in the hydronuclear range releasing a millionth of the energy of a Hiroshima bomb will provide little useful knowledge; tests releasing 100 tons—that is, 1% of the Hiroshima yield—might sometimes be missed by the monitoring system, but would often be detected and located by other means. They, too, would have little value in the development of nuclear weapons. U.S. nuclear weapons will be maintained reliable and safe under a CTBT, thanks to the Stockpile Stewardship programs for assessment and remanufacture. Last but not least among the six safeguards that the Administration has announced is the explicit readiness to invoke the supreme national interest clause should the need arise as a result of unanticipated technical problems in the enduring stockpile of nuclear weapons, that affect a key portion of that stockpile.

On the basis of my experience in the nuclear weapons program, I agree with those U.S. military leaders who have reviewed the benefits and costs to U.S. security from

a CTBT and strongly support the Treaty. Our national security will be improved by ratification and impaired by further delay.

It is thus greatly in our interest to ratify the CTBT now.

Senator BROWNBACK. Thank you, Dr. Garwin, for your testimony. I thank the entire panel for its testimony.

Due to the hour being late, I want to just ask really one quick line of questioning, and then turn it over to Senator Biden to ask a question or two. And then we will probably all move on.

The key area that I have been concerned about has been this issue of entering into a treaty, ratifying it on behalf of the United States, and then something changes and we decide we want to test, or some of the other parties do not get into the treaty. And I look at this as being a big step if we enter into this and we ratify this treaty, if the United States does that. And I really question if other countries would follow.

Director Lehman, specifically, I would like to ask you this. President Clinton has said, in his safeguard F, that he would be prepared to withdraw from the CTBT to conduct underground testing if a high level of confidence in a weapon type critical to the U.S. nuclear deterrent could not otherwise be maintained. He said, we will do it, pull out.

When was the last time the United States withdrew from an arms control treaty using the supreme national interest clause?

Mr. LEHMAN. I am not sure that we ever had, but I would check that for the record.

But I think there are several bigger issues here that I think are very important, not just for the CTBT debate, but for the whole future of arms control and international law, and the question of the dynamics of how this plays out in years when this Congress is going to have a lot of new Members and there will definitely be new Presidents. And that is the following:

The supreme national interest clause is something that we have never taken lightly. To invoke it is a major step. And to invoke it sends a major signal to other nations around the world. We have already had a country like Iran state that if the United States or others were to invoke the supreme national interest clause for the purpose of testing, that they would then feel free to invoke it for their own purposes, as well.

We run into a danger here, because, first of all, Iran is already a party to the NPT and should not have nuclear weapons and should not be sitting around planning to test in case we use the safeguard F. But in the history of arms control, we really sought other measures. If you had a problem that you thought you were going to face, you tried to negotiate a provision.

This administration also sought that. They were not able to get it, but they saw the wisdom of something other than using the supreme national interest clause. When I was Director of ACDA, there was a tremendous interest among neutral and nonaligned diplomats for some movement on nuclear testing. And I worked something called the VOTA mandate, to help move that along.

But many of them would come to me and say, well, look, on the CTBT, all right, we hear you have got a problem that you might need to test for safety. Well, maybe we could negotiate something where you could test for safety if you needed to. It would be OK.

We could understand that. Well, of course, the climate changed, the negotiating positions changed.

Now, we did not like that either, because we are not exactly anxious to signal we have got a problem in the stockpile by having to invoke an extraordinary measure. But we certainly would have preferred to have a measure that legitimized doing that better than having to invoke this supreme national interest clause.

Senator BROWNBACK. Is not that the case, Secretary Wade, that if you did withdraw from the CTBT, it advertises to the world that there is a problem with the U.S. deterrence, really thus undermining some of the real value of the U.S. nuclear deterrence?

Mr. WADE. Yes, Senator Brownback, I think that is a very serious consideration that the Senate must visit in the next several days, and that is, assuming that there is a problem in the enduring stockpile, and history will demonstrate that that certainly is possible, one way to announce to your enemies that you have developed a major problem is by invoking the national interest clause. I think that requires very serious consideration.

I would like to go one step further by saying that safeguards such as safeguard F have also not ever proven to be a satisfactory way to deal with the treaty. A perfect example of that is safeguard C of the Limited Test Ban Treaty, which said that the United States would maintain the ability to return to atmospheric testing should it be in the national interest. Maintaining that capability is a very expensive thing, and it does not take very many years for this body or the administration to decide that that is no longer necessary and the safeguard disappears.

Senator BROWNBACK. I appreciate the comments each of you made, and Mr. Lehman, I would say we have done the check on this, and the United States has never withdrawn from an arms control treaty using the supreme national interest, and some would say, well, we are not quite at that point in entering into this at this point.

My point with that is that when the United States takes these sort of steps, we mean it. When the U.S. Senate ratifies a treaty, it sets it in stone. This is what we mean, and with the flux that is around the world today, and the back-and-forth testimony we have had from key people at very high and senior levels who have been in on these negotiations, I think that is not something that one, we want to take and set in stone at this point in time.

Dr. GARWIN. Excuse me. You asked all three of us that question.

Senator BROWNBACK. Well, Mr. Secretary, you can answer. I am going to pitch it to Senator Biden.

Senator BIDEN. I would ask the question you want to answer.

Dr. GARWIN. Thank you. I think, Mr. Chairman, your question had two parts, and one was, you are not sure that the other states will ratify, and that we will be bound by our ratification, and they will not. Well, we are no more bound. The treaty will not have entered into force. We already have a moratorium and a treaty we have already signed. We are not about to test, except for good reason.

The second is the supreme national interest. Well, this is not the only condition under which the United States supreme national in-

terest would be involved. We could give supreme national interest for any good reason which involved our supreme national interest.

Senator BROWNBACk. We have just never used it before, Dr. Garwin.

Dr. GARWIN. The supreme national interest does not seem to have been jeopardized thus far.

Senator BROWNBACk. But I would also submit we just are not going to do that.

Dr. GARWIN. We would not be shy with regards to our supreme national interest in this treaty, and I would suggest the President would exercise that right.

Senator BIDEN. I am fascinated by this non sequitur we have imposed the supreme national interest. Name me a time we should have imposed our supreme national interest that we did not. Have you got one for me? And you ought to be able to come up with one, Mr. Secretary.

Mr. LEHMAN. I think we are headed in that direction on the ABM Treaty.

Senator BIDEN. Have we gotten there yet, and would you, if you were the Secretary of State or Defense, would you say to the President, a Republican President, invoke the supreme national interest now to get out of the ABM Treaty?

Mr. LEHMAN. Do you know what the consequences are of invoking the supreme national interest?

Senator BIDEN. I sure as hell do, better than you do. But would you recommend it? Your job is not to make a policy judgment about the consequences. Your job is to determine whether our supreme national interest—this is crazy. Nobody has suggested to me, ever, including any Senator, where we should have invoked our supreme national interest in any treaty.

Mr. LEHMAN. Then, Senator, I think you have gotten to the heart of the matter, and if I could have just a second to raise an issue that is related to this.

Senator BIDEN. The chairman is going to tell me my time is up, but hold the thought, and I would like to hear, because I think we should keep going on, because you guys are the most important witnesses we have had here, because we have got you all together.

Now, one of the things I have heard repeatedly, which I find to be—and I will not say what I find it to be. Yesterday, the former Secretary of everything, Mr. Schlesinger, indicated that there is no way to take a physics package, Dr. Garwin, and replace it. It was not possible to do that.

Do any of you take issue with what Dr. Garwin said, that there is an ability to remanufacture the physics package and replace an entire physics package without testing? Do any of you doubt that?

Mr. WADE. I would like to comment, Senator Biden, if I may. I think that first of all you have to remember that the weapons to which Dr. Garwin referred were not designed to be remanufactured. They were designed to be replaced at the end of what was then predicted to be their useful life.

Senator BIDEN. That is not the question.

Mr. WADE. Manufacturing techniques and materials have certainly changed in the last 20 or 25 years, and I submit it would

be very difficult to remanufacture something to 25 or 20-year-old, or 15-year-old standards.

Senator BIDEN. Doctor, what is your response to that?

Dr. GARWIN. Well, we have looked at that thoroughly, and the laboratories are pretty confident that they can do it. I would be happier had we already built a pit manufacturing capability and were turning out 200 pits a year. I think we have been too slow. That is true whether we have a CTBT or not.

But I have no doubt that we could make the plutonium. We have the stock of high explosives. We test the high explosive, there is no problem with that, until we get it right, and the secondary is much more forgiving than is the primary, so it is the primary.

We could test these things, incidentally, at half-scale, where there is no nuclear yield at all, very little discussed, but everything behaves the same, we have the flash radiography, which we have used in the past. No, it is too soon to say that our stockpile stewardship and remanufacturing effort is a failure when those in charge of doing it and those depending on its success, the military, say it can be done.

Senator BIDEN. We are going to learn more by you all debating. Tell me why he is wrong.

Mr. LEHMAN. Let me make a couple of general comments.

Senator BIDEN. I do not want you to make general comments. I really want this to be a little like a debate. Tell me if he is wrong.

Mr. LEHMAN. The statement that it is too early to say that it will not work is not the same thing as saying that it is time to say it will work. That is the problem. But yes, I think we ought to be very optimistic on what can be done in a number of these areas.

The problem is that in the end, if we are faced with a failure, with a debate, with a problem, when we have had this before, the political system wants answers and it wants bold action to be taken. Pit remanufacture requires infrastructure, it requires funding over a period of time.

When the debate over this treaty is over, is that going to be there?

Senator BIDEN. I think the question is this: Does anybody—and you obviously are well-versed in the politics of this place. Ask anyone. Does anyone believe that if we defeat this treaty the U.S. Congress for the next 4 years is going to spend \$4.5 billion per year on a stockpile stewardship program that relies upon computers to do the job which you say, Mr. Wade, can be done by testing?

Do you honestly think you are going to convince any Congress? Get a life, as my daughter would say. Not a possibility. I will stake my career on that one, zero, and you know it. Zero. We cannot even get the Republican House, as Pete Domenici says, to fund it fully now, the Republican House. Ask Pete Domenici, who has been begging for the dollars, and you think we are going to get that, or we are going to get the remanufacture—what is the term of art for the pits?

Dr. GARWIN. Remanufacture.

Senator BIDEN. Come on, guys. There is no possibility, so you will have your ability to test, and then answer the question. Does anybody think there is a political will of the next President of the United States to engage in the kind of testing that I am told—un-

less you disagree, now. Dr. Garwin says the only test that will have any real relevance for us are tests that are in a megatonnage that will provide, that will be detectable by the whole world. Now, do you think anybody is going to go out there?

And the third question I would ask, and respond to all three, if all three of you would do this, does anybody truly believe that any nation in the world in the foreseeable future with a total of nine separate systems we have, eight deployed, is going to believe that with 6,000 of these armed and aimed, that we are not capable of inflicting annihilation on anyone, that the deterrent does not work?

Do you honestly—and I wish you all were under oath. Do you honestly believe any nation in the world would doubt, not our use of them, because they doubt that now, or not, but doubt their reliability as a deterrent? And I would like you to respond.

Mr. WADE. Well, let me try, Senator Biden. No, I do not believe any nation, or any other nation would be concerned about whether or not one of our—pick a number, 6,000 weapons did not work.

Senator BIDEN. What if half of them did not work?

Mr. WADE. I submit you have to state the question the other way. If you are the Commander in Chief of this country, are you comfortable if some number, or any portion of some number may not work? I submit the answer is probably you would not be very comfortable.

Senator BIDEN. I submit to you, sir, that is not what deterrence is. Deterrence is what he thinks I am capable of doing, and if he thinks I am capable of blowing him into next Wednesday, and he believes that, and I know he believes that, then my deterrence is in place. That is what deterrence means. Let us not redefine deterrence.

Now, you may talk about whether we believe there is a sufficient capability to do everything we think we would like to do in terms of first strike capability, in terms of hard target kill, et cetera. That is a different deal. That is a different deal.

But gentlemen, I have been hearing for the last 2 days from people otherwise very, very, very well-informed, that they believe that the stockpile stewardship program will throw into question in the minds of the Japanese, specifically named, the Germans, the Russians, the Chinese, our deterrent capability. Now, do any of you want to go on the record and say you believe that to be true?

Mr. LEHMAN. Senator, I do not think you have got the question right.

Senator BIDEN. I am asking the question. You may not like it.

Mr. LEHMAN. I understand. Let me try to address it. First of all, the question of the deterrent depends upon the ability to deploy the forces.

Senator BIDEN. No, the question of a deterrent depends upon the ability of the other side to conclude whether or not you can do them great harm.

Mr. LEHMAN. If nuclear forces that were committed to an alliance or to an ally would have to be withdrawn because we had an uncertainty, for example, about the safety, or they did not need our—

Senator BIDEN. Do you think that is a realistic possibility any time in your lifetime?

Mr. LEHMAN. I have already faced it. It is important that when we plan with our allies and deploy forces on the high seas, overseas, or even in our own country, that those commitments can be maintained, and if problems emerge we have a way to address them, and with confidence. The failure to do that could have very adverse implications on the long-term security relationship.

Let me give you an analogy that I can talk about. It is a little different, but it was the question of what happened in the INF negotiations when we were trying for the goal of zero, and then because that seemed so hard to get, we floated the idea of zero in Europe but some deployments east of the Urals. Despite all of the assurances from our interactions with the Japanese Government at an official level that that was good because they supported getting a treaty, once it became public, the backlash in Japan was severe.

Now, the antinuclear allergy in Japan is still very strong, but it is a society that can get polarized over issues like this. I mean, this was once and still is to some degree a Samurai society. It was amazing to see the public articles calling for increased Japanese military, the prospect of nuclearization. It was important that we went back and got global zero.

The ability for these things to become unraveled over issues that seem small to us because we think we have got a lot of nuclear weapons should not be underestimated.

Senator BROWNBAC. Can we wrap this on up?

Senator BIDEN. I do not know why we should wrap it up.

Senator BROWNBAC. Well then, let us run the time clock so we can bounce back and forth. Why don't you let me get in a couple of questions here if I could. We will let you rest for a little bit.

Senator BIDEN. I have been waiting 2 years for this.

Senator BROWNBAC. Let us put the clock on 5 minutes so we can bounce back and forth. I mean, I appreciate, Joe, you raising this, because I think you crystallized for me the reason I have real problems with the treaty, is that you have got a stockpile there that apparently, then, we are just going to be willing to kind of go off into the future, never testing and just presume it will always work.

Senator BIDEN. That is not true. We have tested extensively.

Senator BROWNBAC. But you are saying we are not going to have the will to do it, and this treaty is going to enter us into a position that we are going to further erode any sort of will to do that.

Senator BIDEN. I am saying the exact opposite.

Senator BROWNBAC. But the argument you make leads this way, and that is why I look at it and say we probably are going to further deteriorate our will to test something. We are going to get down the road 5 years, 10 years—it will have been since 1992 that we will have tested, so we have got 7, now we are 12 years down the road, and my kids are getting a little bit older now, and I have got more of them, at that point in time, and now we are all of a sudden we are feeling like we need to have this deterrent, and we need to have the rest of the world believe it is going to work, and we are now 12 years on out.

I appreciate Dr. Garwin's statement about, we are pretty confident they could do it after testing the different parts but not the

whole. I do not want it to be pretty confident. I want it to be sure that we are going to be able to make it at that point in time, when we are 12 years out, and having not done the complete testing, but we are going to test each individual part.

You are asking me to go on pretty confident, and you are asking me to go against my own senses on this as well, which say to me that any machine not tested for a long period of time in total is going to work, and I have got to have the rest of the world believing it is going to work as well for it to be an effective deterrent at that point in time.

So we are 12 years out, we have tested the parts individually, they all seem to work, and I have got to now be sure that the Russians and the Chinese and the Iraqis and the Iranians believe this is going to work for it to be an effective deterrent. I think you are stretching us on that point.

Now, correct me where I am wrong, Dr. Garwin.

Dr. GARWIN. I think it would be useful for you to look at some of the testimony of the Department of Energy over the years on the joint test vehicles, the joint verification vehicles. We have these precision devices where you test not parts, you test the whole thing, but the ultimate nuclear explosive you do not have. You have uranium instead of plutonium. It goes through the flight, it fires, you have telemetry, you see the whole thing works or it does not, and I can assure you that we conduct these flights and we learn a lot from them.

Senator BROWNBACk. Not the whole thing. The end of the test does not happen.

Dr. GARWIN. When you do that you find problems, but the problems are not going to be from the lighting of the high explosive to the carrying out of the nuclear explosion; and if you don't believe that, you need to get a whole new set of people not only in the Department of Energy, but in the Department of Defense and in the military services.

Senator BROWNBACk. Dr. Garwin, how far down the road can we run that type of operation and have our people who seek to do us harm around the world believe our deterrent is still there, and it works? How many years can we go?

Dr. GARWIN. We can go 30, 50, 100 years, because every year you have—

Senator BROWNBACk. Being pretty confident?

Dr. GARWIN. Every year you have these people in the business put their reputations, their lives and our lives on the line in their certification process.

Senator BROWNBACk. Well then, here are some of the people, the laboratory directors—these are former ones. Roger Batzel, do you know him?

Dr. GARWIN. I know him well, sure.

Senator BROWNBACk. "I urge you to oppose the Comprehensive Test Ban Treaty. No previous administration, either Democrat or Republican, ever supported the unverifiable zero yield, indefinite duration CTBT now before the Senate. The reason for this is simple. Under a long duration test ban, confidence in the nuclear stockpile will erode for a variety of reasons."

Now, I presume you think he is a pretty good guy, pretty sharp.

Dr. GARWIN. I have argued with Roger Batzel on exactly this point long ago.

Senator BROWNBACk. You can argue with him again.

Dr. GARWIN. I do not know how current he is. I would like to have him here where we could discuss it, but I do not believe it, and the current people who have the responsibility and who have the knowledge are not of that view.

Senator BROWNBACk. What about John Nuckolls?

Dr. GARWIN. I know him well, too.

Senator BROWNBACk. Is he a good guy?

Dr. GARWIN. He is OK. I could go into details, plus and minus. On balance, like the CTBT, he is a good guy.

Senator BROWNBACk. "Without nuclear testing, confidence in the stockpile will decline. The U.S. capability to develop weapons will be degraded by the eventual loss of all nuclear tests, experienced weapons experts who develop the stockpile." That is what he says about it. How about Edward Teller? Is he OK?

Dr. GARWIN. In my testimony, I address that. That is looking at the bad side, the down side of the CTBT. If you look at the upside, it much outweighs that.

Senator BROWNBACk. Is there a downside, then, to this?

Dr. GARWIN. Absolutely.

Senator BIDEN. Explain what you mean by the downside.

Senator BROWNBACk. You get your questions quickly. I am getting off here, Joe. We are going to have fun here. Let us share.

Dr. GARWIN. In my testimony I list it. It is our inability to test. It is the inability to bring in people and have them verify things by test. But we have work-arounds, and I am confident these will be good, and we have the benefit.

You know there is nobody—Tom Watson, Sr., who founded the IBM Company, for which I worked for 40 years, used to say that there is nobody who is so good that if you have a piece of paper with all of his advantages and all of his bad points, and you just pick the bad points, that person ought to go straight to hell, and there is nobody who is so bad that if you just put the paper with his good points on the table that he ought to go to Heaven, and any of these contracts or treaties is like that. You have to look at the balanced assessment, and not just at the downside.

Senator BROWNBACk. I think Joe and I both think we all need grace to get to Heaven, because we have all got problems here. Joe.

Senator BIDEN. By the way, I am confident of that and if my mother is listening, she would look at the three of you and say no purgatory for you, straight to Heaven, for enduring this, this long. But let me suggest that I would like to followup on a few other points here.

I have heard, and this has been stated, that this notion that, and maybe you can explain this to me, Dr. Garwin, in a tri-lab study of stockpile surveillance done in 1996 by the three laboratories, they said since 1958 through 1993, 830 recorded findings of defects in the stockpile. They said that less than 1 percent were determined as a consequence of a nuclear test. And they said all but one of these nuclear tests involved items that were in the inventory before 1970. What does that mean?

Dr. GARWIN. Well several of those bombs had not been thoroughly tested. They were put into the stockpile during the moratorium from 1958 to 1961, whenever that was. And I have always opposed doing that. I opposed modifying our nuclear weapons under the moratorium or under the CTBT.

The one case which was discovered, as I recall, by testing, was an end-of-life tritium condition. We tested something beyond where it had previously been tested. And we propose in our JASON study, which looked at all of these things, that the margins of the existing nuclear weapons should be improved. They are believed by the establishment to be adequate, but they should be improved by putting in more tritium or changing the tritium gas more frequently. That is a cheap thing to do and something that can be readily done without any downside. So we ought to do that. But perhaps my colleagues know of some other points.

Mr. WADE. Well, Senator Biden, thank goodness we have the surveillance programs to which you referred. And, yes, you are correct in that all of those defects were discovered as part of the surveillance program and not by a test. But there certainly are circumstances in which I have personally participated where a defect that was discovered could only be resolved by a test. Now we may get to a point through stockpile stewardship where we will not have to do that, where we can assure that the resolution of the problem is satisfactory by three-dimensional computational codes. I hope we get there. But my point is I do not think we are there yet and, therefore, I think we are at risk.

Dr. GARWIN. Let me be very specific in addressing that point. You find something. A beam—in a building—that has a crack in it. You do a lot of analysis because it might be costly to replace that beam and you say it is OK. We can wait until the crack goes a little bit further. But this is serious. This is the national deterrent. I do not want to do that. I want to replace it before I get to the point where there is any uncertainty. I find a crack; it is beyond the level of cracks, or crevices, or whatever, in the newly manufactured item; I want to replace that piece. That is what I would do. That is why I do not need to push this surveillance program and analysis program as far as people hope it will go.

What will happen as the years go on, Mr. Chairman, is that we will be able to tolerate bigger cracks and less frequent manufacturing. We will not save any significant amount of money because we do not have all that many weapons in the inventory anymore. In fact, it might be cheaper to go on with frequent remanufacture, rather than push the surveillance program, the stockpile stewardship program. But I am willing to go with what the labs and the military think are the best.

Senator BIDEN. Now, Mr. Wade, you have indicated that we may get to the point, and we have not yet, where through very sophisticated stockpile testing techniques we might be able to have confidence not to test, but we are not there yet.

Mr. WADE. I do not believe we are.

Senator BIDEN. I am not suggesting we are either. But, now the chairman and many others say even if you get there, that will not matter because unless you can actually test it and watch it blow up, and see it work, it is not reliable. So we are kind of in a little

bit of a Catch-22 here. The people who were arguing about the stockpile testing not being sufficient. If you take off the second layer of the onion here, they say even if—well, I should not say the chairman said, but the chairman of the Armed Services Committee said, even if you can get to that point, it is still not good enough because the only way you can test is to watch it blow up. That is the only way you have any certainty. Do you agree with that? Even theoretically, if you get to the point—

Mr. WADE. Being an experimentalist I always like to watch things blow up, because that is, in fact, the final proof that it works. But I do believe that we will get to the kinds of computational techniques where you will not have to do that? I hope we do.

Senator BIDEN. If we were there now, and we are not, I acknowledge. My time is up. I am sorry, go ahead.

Senator BROWNBACK. I appreciate the honesty of all of you and I do hope we get to that point in time, too. The point that I would have here is that we are not there yet, according to this list of witnesses. And according to Dr. Garwin, we are not there yet either. You were on the JASON report group that issued a report on nuclear testing, August 4, 1995?

Dr. GARWIN. Right. That is what I was referring to. You can find it. It's unclassified, summary and conclusions. I have them with me.

Senator BROWNBACK. You have a quote in there. Maybe you disagree with it now. "In order to contribute to long-term confidence in the U.S. stockpile, testing of nuclear weapons under a 500-ton yield limit would have to be done on a continuing basis. Such ongoing testing can add to long-term stockpile's confidence."

Dr. GARWIN. I think that is a misreading of the statement. I have not changed my mind. It really means that if any testing at 500-tons were to contribute to the confidence then it would have to be continued. It is saying that testing at 500-tons for a few years would not be of any help. And it does not contribute much anyhow. But that statement does not mean that a CTBT would lead to lack of confidence in the stockpile.

Senator BROWNBACK. It seems to read pretty clear to me. What you were saying, or what your report was in 1995—

Dr. GARWIN. It was addressing the proposal. It says, for the U.S. stockpile testing under a 500-ton yield limit would allow studies of boost and ignition and initial burn and so on. The primary argument that we heard was this and that and so on. And it follows from this argument, so that is not saying we believe it, that this utility depends on such tests being performed on a continuing basis and yielding reproducible results. If you will read the whole couple of paragraphs I think it will say quite the opposite of what you imply.

Senator BROWNBACK. Well, let us get that and we will have that there as well.

[The correct quotation from the report follows:]

Conclusion 4:

In order to contribute to long term confidence in the U.S. stockpile, testing of nuclear weapons under a 500 ton yield limit would have to be done on a continuing basis, which is tantamount to remaking a CTBT into a threshold test ban treaty. While such ongoing testing can add to long term stockpile confidence, it does not

have the same priority as the essential stockpile stewardship program endorsed in Conclusion 2, nor does it merit the same priority as the measures to enhance performance margins in Conclusion 3. In the last analysis the technical contribution of such a testing program must be weighed against its costs and its political impact on the non-proliferation goals of the United States.

Dr. GARWIN. I would like to put into the record this nuclear testing summary.

Senator BROWNBACK. So ordered. Without objection.

[The information referred to follows:]

NUCLEAR TESTING—SUMMARY AND CONCLUSIONS—JASON—AUGUST 4, 1995 (JSR-95-320)

(Sidney Drell, Chairman, John Cornwall, Freeman Dyson, Douglas Eardley, Richard Garwin, David Hammer, John Kammerdiener, Robert LeLevier, Robert Puerifoy, John Richter, Marshall Rosenbluth, Seymour Sack, Jeremiah Sullivan, and Fredrik Zachariassen)

SUMMARY AND CONCLUSIONS

(U) We have examined the experimental and analytic bases for understanding the performance of each of the weapon types that are currently planned to remain in the U.S. enduring nuclear stockpile. We have also examined whether continued underground tests at various nuclear yield thresholds would add significantly to our confidence in this stockpile in the years ahead.

(U) Our starting point for this examination was a detailed review of past experience in developing and testing modern nuclear weapons, their certification and re-certification processes, their performance margins,¹ and evidence of aging or other trends overtime for each weapon type in the enduring stockpile.

Conclusion 1:

(U) The United States can, today, have high confidence in the safety, reliability, and performance margins of the nuclear weapons that are designated to remain in the enduring stockpile. This confidence is based on understanding gained from 50 years experience and analysis of more than 1000 nuclear tests, including the results of approximately 150 nuclear tests of modern weapon types in the past 20 years.

(U) Looking to future prospects of achieving a Comprehensive Test Ban Treaty (CTBT), a stated goal of the United States Government, we have studied a range of activities that could be of importance to extending our present confidence in the stockpile into the future. We include among these activities underground experiments producing sub-kiloton levels of nuclear yield that might be permitted among the treaty-consistent activities under a CTBT.

(U) Three key assumptions underlie our study:

1. (U) The U.S. intends to maintain a credible nuclear deterrent.
2. (U) The U.S. remains committed to the support of world-wide nonproliferation efforts.
3. (U) The U.S. will not encounter new military or political circumstances in the future that cause it to abandon the current policy—first announced by President Bush in 1992—of not developing any new nuclear weapon designs.

Conclusion 2:

(U) In order to maintain high confidence in the safety, reliability, and performance of the individual types of weapons in the enduring stockpile for several decades under a CTBT, whether or not sub-kiloton tests are permitted, the United States must provide continuing and steady support for a focused, multifaceted program to increase understanding of the enduring stockpile; to detect, anticipate and evaluate potential aging problems; and to plan for refurbishment and remanufacture, as required. In addition the U.S. must maintain a significant industrial infrastructure in the nuclear program to do the required replenishing, refurbishing, or remanufacturing of age-affected components, and to evaluate the resulting product; for example the high explosive, the boost gas system, the tritium loading, etc. Important activities in a stockpile stewardship program that will sustain a strong scientific and technical base, including an

¹ Defined as the difference between the minimum expected and the minimum needed yields of the primary.

experienced cadre of capable scientists and engineers, are described in the body of this study.

(U) The proposed program will generate a large body of technically valuable new data and challenging opportunities capable of attracting and retaining experienced nuclear weapons scientists and engineers in the program. This is the intent of DOE's currently planned stockpile stewardship program.² For the success of this program, the management of the three weapons laboratories (LANL, LLNL, SNL) must motivate, support, and reward effort in an area that has lost some of its glamor and excitement in the absence of new nuclear design and test opportunities.

(U) Nevertheless, over the longer term, we may face concerns about whether accumulated changes in age-affected weapons components, whose replacements might have to be manufactured by changed processes, could lead to inadequate performance margins and reduced confidence in the stockpile.

(U) Enhancements of performance margins will add substantially to long-term stockpile confidence with or without underground tests. To cite one example, we can adjust the boost gas fill or shorten the time interval between fills. (This is discussed more fully in the classified text.)

Conclusion 3:

(U) The individual weapon types in the enduring stockpile have a range of performance margins, all of which we judge to be adequate at this time. In each case we have identified opportunities for further enhancing their performance margins by means that are straightforward and can be incorporated with deliberate speed during scheduled maintenance or remanufacturing activities. However greatest care in the form of self-discipline will be required to avoid system modifications, even if aimed at "improvements," which may compromise reliability.

(U) This brings us to the issue of the usefulness, importance, or necessity of reduced yield (less than 1 kiloton) underground tests for maintaining confidence in the weapon types in the U.S. stockpile over a long period of time.

(U) For the U.S. stockpile, testing under a 500 ton yield limit would allow studies of boost gas ignition and initial burn, which is a critical step in achieving full primary design yield. The primary argument that we heard in support of the importance of such testing by the U.S. is the following: the evidence in several cases and theoretical analyses indicate that results of a sub-kiloton (~ 500 tons) test of a given primary that achieves boost gas ignition and initial burn can be extrapolated to give some confidence in the yield of an identical primary with full boosting. Therefore, if a modified or remanufactured primary is introduced into the stockpile in the future to correct some aging problem, such tests on the modified system would add to confidence that the performance of the new primary is still adequate.

(U) It follows from this argument that the utility to the U.S. of testing at yields of up to approximately 500 tons depends on such tests being performed on a continuing basis and yielding reproducible results. If they are permitted only for a few years, such tests could add to the theoretical understanding of the boosting process and the reliability of the computer codes that attempt to describe it, but would not contribute directly to the reliability of the weapon in the enduring stockpile in view of the possible manufacturing changes made at a later date. To gain evidence as to whether long-term changes in age-affected weapons components have any impact on boost-performance the tests would have to be made with the remanufactured weapons themselves.

Conclusion 4:

(U) In order to contribute to long term confidence in the U.S. stockpile, testing of nuclear weapons under a 500 ton yield limit would have to be done on a continuing basis, which is tantamount to remaking a CTBT into a threshold test ban treaty. While such ongoing testing can add to long term stockpile confidence, it does not have the same priority as the essential stockpile stewardship program endorsed in Conclusion 2, nor does it merit the same priority as the measures to enhance performance margins in Conclusion 3. In the last analysis the technical contribution of such a testing program must be weighed against its costs and its political impact on the non-proliferation goals of the United States.

Conclusion 5:

(U) Underground testing of nuclear weapons at any yield level below that required to initiate boosting is of limited value to the United States. However experiments

² See the 1994 JASON Report JSR-94-345 on "Science Based Stockpile Stewardship."

involving high explosives and fissionable material that do not reach criticality are useful in improving our understanding of the behavior of weapons materials under relevant physical conditions. They should be included among treaty consistent activities that are discussed more fully in the text.

(U) This conclusion is based on the following two observations.

- (U) [a] So-called hydronuclear tests, defined as limited to a nuclear yield of less than 4 lbs TNT equivalent, can be performed only after making changes that drastically alter the primary implosion. A persuasive case has not been made for the utility of hydronuclear tests for detecting small changes in the performance margins for current U.S. weapons. At best, such tests could confirm the safety of a device against producing detectable nuclear yield if its high explosive is detonated accidentally at one point. We find that the U.S. arsenal has neither a present nor anticipated need for such re-confirmation. The existing large nuclear test data base can serve to validate two- and three-dimensional computational techniques for evaluating any new one-point safety scenarios, and it should be fully exploited for this purpose.
- (U) [b] Testing with nominal yields up to a 100-ton limit permits examination of aspects of the pre-boost fission process. However, this is at best a partial and possibly misleading performance indicator.

(U) As agreement to limit testing to very low yields raises the issue of monitoring compliance. We have not made a detailed study of this issue, but note the following: Cooperative, on-site monitoring would be necessary, and relevant measurements, including for example neutron yields, could be made without compromising classified information on bomb designs.

(U) We have reviewed the device problems which occurred in the past and which either relied on, or required, nuclear yield tests to resolve.

Conclusion 6:

(U) For the weapon types planned to remain in the enduring stockpile we find that the device problems which occurred in the past, and, which either relied on, or required, nuclear yield tests to resolve, were primarily the result of incomplete or inadequate design activities. In part, these were due to the more limited knowledge and computational capabilities of a decade, or more, ago. We are persuaded that those problems have been corrected and that the weapon types in the enduring stockpile are safe and reliable in the context of explicit military requirements.

(U) Should the U.S., in the future, encounter problems in an existing stockpile design (which we do not anticipate at present) that are so serious as to lead to unacceptable of confidence in the safety, effectiveness, or reliability of a weapon type, it is possible that testing of the primary at full yield, and ignition of the secondary, would be required to certify a specified fix. Useful tests to address such problems generate nuclear yields in excess of approximately 10 kT. DOE's currently planned enhanced surveillance and maintenance program is intended to alert us to any such need that may arise. A "supreme national interest" withdrawal clause that is standard in any treaty to which this nation is a signatory would permit the U.S. to respond appropriately should a need arise.

Conclusion 7:

(U) The above findings, as summarized in Conclusions 1 through 6, are consistent with U.S. agreement to enter into a Comprehensive Test Ban Treaty (CTBT) of unending duration, that includes a standard "supreme national interest" clause. Recognizing that the challenge of maintaining an effective nuclear stockpile for an indefinite period without benefit of underground tests is an important and also a new one, the U.S. should affirm its readiness to invoke the supreme national interest clause should the need arise as a result of unanticipated technical problems in the enduring stockpile.

Senator BROWNBACK. But it adds to my question when I look at this, when I think of the Secretary of Defense, Secretary Cohen's statements earlier in his career, when he was a Senator. Questions and shift now and maybe people just grow in their difference of opinion, but I appreciate your candor. I appreciate Dr. Wade's comments about "he hopes we get there." But that we are not there yet. Do you have a parting comment, Joe? Then let us shut it down.

Senator BIDEN. I think when you put the whole summary in, you will see on page eight, it says, "We have reviewed the device problems which occurred in the past and which either relied on, or required, nuclear yield tests to resolve. Conclusion 6. For the weapon types planned to remain in the enduring stockpile we find that the device problems which occurred in the past and which either relied on, or required, nuclear yield tests to resolve, were primarily the result of incomplete or inadequate design activities. In part, these were due to the more limited knowledge and computational capabilities of a decade, or more, ago. We are persuaded that these problems have been corrected and that the weapons types in the enduring stockpile are safe and reliable in the context of explicit military requirements."

And, Secretary Cohen, I ask unanimous consent that his response to that question in the Armed Services Committee hearing be able to be entered into the record, if I may, Mr. Chairman, so that nothing is left—well, I know his arguments. I don't want to take the time now. But if we could have Secretary Cohen's response because the same issue was raised in the Armed Services Committee in my presence and he gave an answer that explained why he said what he said then and why he is where he is now, and it related to safety issues. But if we could put that in the record.

Senator BROWNBAC. His statement to the Armed Services Committee on that section.

Senator BIDEN. Yes, not my characterization but his statement.

Senator BROWNBAC. Without objection. That will be put in the record.

[The information referred to follows:]

RESPONSE OF SECRETARY COHEN TO QUESTION ASKED BEFORE THE ARMED SERVICES COMMITTEE ON OCTOBER 6, 1999

Secretary COHEN. Mr. Chairman, I would like to conclude with just a couple of comments. You pointed this fact out. And some of the members who are sitting here today also were sitting here back in 1992. There are some new members who were not here.

And you may recall, and I am sure that several on the committee will recall, that as a Senator, I had considerable doubts about the wisdom of prematurely halting nuclear testing, because many of the weapons in the stockpile lacked modern safety features. But a lot has changed in the last 7 years, much more so than my simply moving my desk over to the Pentagon.

As we have reduced our arsenal, these older weapons in the stockpile have been retired. And they have eased my concerns. The threat of nuclear missile proliferation is more significant today than it was in 1992. There was no CTBT in 1992. And today there is.

You have 154 nations who have signed the Treaty. You have 47 who have ratified it, including a majority of the 44 required before it can enter into force. And, finally, all five nuclear powers who were testing in 1992 today, all five have declared testing moratoriums.

Senator BIDEN. Mr. Chairman, you have been very gracious. I will not take any more of your time beyond saying that, gentlemen, I really do think you have been the best witnesses in the last 4 days I have heard, even though you disagree.

Senator BROWNBAC. Certainly the most fun.

Senator BIDEN. Well, because for the first time you have been the ones given a chance to actually have an exchange here. I love this new process. I wish this man were running all the hearings I have been involved in. You know, it used to be when we were trying to

figure out what a Supreme Court Justice thought and I was chairman of a committee, I gave every Republican a half hour of questioning, because the best of all things to do when you want to defeat something, if I do not want the press to know what is on my mind, I invite 50 of them to show up. All 50. Then I am guaranteed they all come with the one question they want to know, and none of them will followup on the other guy's question, out of ego, which means I never have to give a complete answer. And that is exactly what happens in these hearings when we limit things to 6 minutes.

How any intelligent person, let alone uninformed people like us, relative to your collective, intellectual, and professional capability can in 6 minutes question you in a way that can elicit any intelligent response or enter into a debate and dialog is nonexistent, in my humble opinion. And I do not think I am particularly slow. I am at least no slower than the average Senator, I do not think. I am pretty good at this stuff and to get 6 minutes with you guys who have been doing this all your life, that is why I want to thank you, Mr. Chairman.

Senator BROWNBACK. Gentlemen, thank you very much. You have been good and patient with us and we deeply appreciate that and we appreciate also your thoughtfulness because I know none of you come at your opinions, however we may disagree, lightly. Nor do any of you come at them with a malevolence toward this country or a will for anything ill to come to the United States. We have just got a serious issue and we need serious thought, and you have provided that. With that the hearing is adjourned.

[Whereupon, at 7 p.m., the hearing was adjourned.]

