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Senate

The Senate met at 9:30 a.m. and was called to order by the President pro tempore [Mr. THURMOND].

PRAYER

The Chaplain, Dr. Lloyd John Ogilvie, offered the following prayer:

Almighty God, all power and authority belongs to You. You hold the universe in Your hands and focus Your attention on the planet Earth. We humble ourselves before You, for You alone are Lord of all nations, and You have called our Nation to be a leader in the family of nations. By Your providence, You have brought to this Senate the men and women through whom You can rule wisely in soul-sized matters that affect the destiny of humankind. With awe and wonder at Your trust in them, the Senators enter executive session today to confront the issues of the Comprehensive Nuclear Test-Ban Treaty.

Grip their minds with three great assurances to sustain them especially today and next Tuesday: You are Sovereign of this land, and they are accountable to You; You are able to guide their thinking, speaking, and decisions if they will but ask You; and You will bring unity so that they may lead our Nation in its strategies of defense, and the world in its shared obligation to use nuclear power for creative and not destructive purposes.

O God of peace, hear our prayer, for You are our Lord and Savior. Amen.

PLEDGE OF ALLEGIANCE

The Honorable MIKE DEWINE, a Senator from the State of Ohio, led the Pledge of Allegiance, as follows:

I pledge allegiance to the Flag of the United States of America, and to the Republic for which it stands, one nation under God, indivisible, with liberty and justice for all.

RECOGNITION OF THE ACTING MAJORITY LEADER

The PRESIDING OFFICER (Mr. DEWINE). The acting majority leader is recognized.

SCHEDULE

Mr. KYL. Mr. President, today the Senate will begin consideration of the Comprehensive Nuclear Test-Ban Treaty with debate taking place throughout the day. Debate time is limited to 14 hours and will resume at 9:30 a.m. on Tuesday, October 12. I encourage my colleagues to come to the floor to discuss this important issue.

As a reminder, cloture was filed on the conference report to accompany the Agriculture appropriations bill on Thursday, and by previous consent the Senate will proceed to that cloture vote on Tuesday at 5:30 p.m. It is hoped that the vote regarding the treaty can be stacked to follow the 5:30 vote.

I thank my colleagues for their attention.

PRIVILEGE OF THE FLOOR

Mr. KYL. Mr. President, I ask unanimous consent that Brad Sweet, staff assistant on the Government Affairs Subcommittee on International Security, Proliferation, and Federal Services be given floor privileges during consideration of the Comprehensive Nuclear Test-Ban Treaty.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. KYL. Mr. President, the Chairman of the Senate Foreign Relations Committee, Senator HELMS, has asked that I manage the time until he is able to arrive, and in that regard I would like to make an opening statement.

EXECUTIVE SESSION

COMPREHENSIVE NUCLEAR TEST-BAN TREATY

The PRESIDING OFFICER. The clerk will report the resolution of ratification.

The legislative clerk read as follows:

Resolved, (two-thirds of the Senators present concurring therein),

That the Senate advise and consent to the ratification of the Comprehensive Nuclear Test-Ban Treaty, opened for signature and signed by the United States at New York on September 24, 1996, including the following annexes and associated documents, all such documents being integral parts of and collectively referred to in this resolution as ''Treaty'', (contained in Senate Treaty Document 105–28):

(1) Annex 1 to the Treaty entitled ''List of States Pursuant to Article II, Paragraph 28'';

(2) Annex 2 to the Treaty entitled ''List of States Pursuant to Article XIV''.

(3) Protocol to the Comprehensive Nuclear Test-Ban Treaty.

(4) Annex 1 to the Protocol.

(5) Annex 2 to the Protocol.

Mr. KYL. Mr. President, let me just pose one unanimous-consent request before we begin. To the extent that it is possible with respect to people in the Chamber ready to make statements, I ask unanimous consent that the debate on the proposition be divided in a way that proponents and opponents speak in opposition to each other, one following the other.

The PRESIDING OFFICER. Without objection, it is so ordered.

The Senator from Arizona.

Mr. BIDEN addressed the Chair.

The PRESIDING OFFICER. The Senator from Delaware.

Mr. BIDEN. It has been raised whether or not that is a good idea. As I understand the unanimous-consent request, it is to the extent possible we will try to alternate between Democrat and Republican, opponents and proponents. That is the same as saying, with one exception, for and against. I do not expect that to mean that we

would not engage each other in colloquy and debate so we don't just have statement after statement.

The PRESIDING OFFICER. The Senator from Arizona.

Mr. KYL. That is precisely why I framed it the way I did.

Mr. DORGAN. Reserving the right to object——

Mr. KYL. It would not be appropriate to say Republican and Democrat, since I know Senator SPECTER would like to speak not in opposition.

Mr. DORGAN. Mr. President, reserving the right to object, I hope the Senator would not put forth any unanimous-consent request. I hope we would simply have an agreement among the two leaders in the Chamber that they will alternate back and forth. The difficulty with a unanimous-consent agreement is you may get a circumstance where you have no one on one side and three or four speakers on the other side.

I think it is practical to manage it the way the Senator has suggested.

Mr. KYL. With the understanding that Senator BIDEN and I just reached, and the Senator just articulated, I withdraw the request, and I assume we can proceed in that fashion.

Mr. President, I rise today to explain why I strongly oppose the Comprehensive Test Ban Treaty that has been submitted to the Senate for its advice and consent.

I think the words of six distinguished Americans who formerly bore the responsibility for safeguarding our nation's security as Secretary of Defense frame the issue before the Senate quite well. In a letter to the majority leader this week, James Schlesinger, Dick Cheney, Frank Carlucci, Caspar Weinberger, Donald Rumsfeld, and Melvin Laird who served as Secretaries of Defense in the Reagan, Bush, Ford, and Nixon administrations, stated:

> 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.

For this reason, these former Secretaries of Defense conclude that the CTBT is ''incompatible with the Nation's international commitments and vital security interests . . . 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.''

I couldn't agree more with the considered judgment of these distinguished Americans who have had the awesome responsibility of maintaining the U.S. nuclear deterrent throughout the cold war and beyond.

Before discussing some of the flaws of the CTBT and how it will undermine the credibility of our nuclear deterrent, a few words on the importance of nuclear deterrence, and the limits of arms control I think are in order.

As my colleagues recall, during the cold war, the Soviet Union enjoyed a tremendous advantage in conventional military forces in Europe. The United States was able to offset this advantage in conventional forces, and to guarantee the security of Western Europe until the cold war ended peacefully, through the maintenance of a credible nuclear deterrent. Our nuclear ''umbrella,'' as it is called, was extended to our allies in other parts of the world as well.

Since the end of the cold war, some have argued that nuclear deterrence is an outdated concept, and the U.S. no longer needs to retain a substantial nuclear weapons capability. However, deterrence is not a product of the cold war and has been around since the beginning of diplomacy and war. Over 2,500 years ago, the Chinese philosopher Sun Tzu wrote about the value of deterrence stating, ''To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill.''

Furthermore, the end of the cold war does not mean national security threats to the United States have evaporated. James Woolsey, President Clinton's first Director of Central Intelligence, aptly described the current security environment when he said, ''We have slain a large dragon [the Soviet Union]. But we live now in a jungle filled with a bewildering variety of poisonous snakes.''

Rogue nations like North Korea, Iran, and Iraq have weapons of mass destruction programs and are hostile to the United States. China is an emerging power whose relationship with the United States has been rocky at best. And Russia retains significant military capabilities, including over 6,000 strategic nuclear warheads.

The gulf war is an excellent case study of the continuing importance of nuclear deterrence in the post-cold-war world. In that conflict, the maintenance of a credible nuclear weapons capability, coupled with the understanding that it was possible that the United States would respond with nuclear weapons if attacked with other weapons of mass destruction, saved lives by deterring such an attack.

As my colleagues recall, Iraq possessed a large arsenal of chemical weapons that it had used against its Kurdish population, and against Iranian troops during the Iran-Iraq war in the 1980s. It is widely acknowledged that Iraq did not use chemical weapons against the United States-led coalition during the gulf war because we possessed a credible nuclear deterrent.

Prior to the start of the gulf war, U.S. leaders practiced the art of deterrence by issuing clear warnings to Saddam Hussein. Secretary of Defense Dick Cheney stated:

> He [Saddam Hussein] needs to be made aware that the President will have available the full spectrum of capabilities. And were Saddam Hussein foolish enough to use weapons of mass destruction, the U.S. response would be absolutely overwhelming and it would be devastating. He has to take that into consideration, it seems to me, before he embarks upon a course of using those kinds of capabilities.

President Bush also sent a strongly worded message to Saddam Hussein which said:

> Let me state, too, that the United States will not tolerate the use of chemical or biological weapons. . . . The American people would demand the strongest possible response. You and your country will pay a terrible price if you order unconscionable acts of this sort.

Iraqi officials have confirmed that these statements deterred Baghdad from using chemical and biological weapons. In 1995, Foreign Minister Tariq Aziz reported to Rolf Ekeus, chairman of the U.N. commission charged with inspecting Iraqi weapons of mass destruction facilities, that Iraq was deterred from using its arsenal of chemical and biological weapons because the Iraqi leadership had interpreted Washington's threats of devastating retaliation as meaning nuclear retaliation.

Aziz's explanation is corroborated by a senior defector, General Wafic Al Sammarai, former head of Iraqi military intelligence, who stated:

> Some of the Scud missiles were loaded with chemical warheads, but they were not used. We didn't use them because the other side had a deterrent force. I do not think Saddam was capable of taking a decision to use chemical weapons or biological weapons, or any other type of weapons against the allied troops, because the warning was quite severe, and quite effective. The allied troops were certain to use nuclear arms and the price will be too dear and too high.

Mr. President, as these statements show, a credible nuclear deterrent remains vitally important to our nation. I would hope that we could begin this debate on the CTBT by agreeing that a strong U.S. nuclear deterrent remains essential and that the Senate should reject any actions that would undermine the credibility of this deterrent.

To the second preliminary point, the fallacy of arms control:

Unfortunately, the CTBT negotiated by the Clinton administration would do just that. This is not surprising since the Clinton administration has sought to protect our national security with a fixation on arms control that columnist Charles Krauthammer aptly calls ''Peace through Paper.''

Of course, arms control is not a new idea. After all, in the year 1139, the Roman Catholic Church tried to ban the crossbow. Like so many other well-intentioned arms control measures, this one was doomed to failure from the start.

And who can forget the Kellog-Briand treaty, ratified by the United States in 1929, that outlawed war as an instrument of national policy. This agreement and others spawned in its wake left the United States and Britain unprepared to fight and unable to deter World War II.

Yet despite these and many other notable failures, the Clinton administration still looks to arms control as the best way to safeguard our security. Under Secretary of State John Holum explained this philosophy during a speech in 1994, stating.

> The Clinton Administration's policy aims to protect us first and foremost through arms control—by working hard to prevent new threats—and second, by legally pursuing the development of theater defenses for those cases where arms control is not yet successful.

The administration continues to cling tenaciously to the ABM Treaty, which prevents us from defending ourselves against missile attack, and numerous other arms control measures have been proposed by senior officials like Secretary of State Madeleine Albright, such as bans of shoulder-fired surface-to-air missiles, laser weapons, anti-satellite weapons, landmines, and even a proposal to limit the availability of assault rifles.

As George Will has said of the administration's arms control philosophy, ''The designation 'superstition' fits because the faith of believers in arms control is more than impervious to evidence, their faith is strengthened even by evidence that actually refutes it.''

There is enduring wisdom in President Reagan's statement of ''Peace through strength.''

In 1780, our Nation's first President, George Washington said, ''There is nothing so likely to produce peace as to be well prepared to meet an enemy.'' Two hundred years later another President, Ronald Reagan, called this doctrine ''Peace Through Strength.''

I urge Senators to think about the enduring wisdom of these statements in the coming days as we debate the Comprehensive Test Ban Treaty and the negative effects its ratification would have on our Nation's security.

Let me turn now to a discussion of the CTBT's many flaws.

America's nuclear weapons are the most sophisticated in the world. This was the point of the letter of the former Secretaries of Defense. They pointed out that each one typically has thousands of parts, and over time in nuclear materials and high-explosive triggers in our weapons deteriorate, and we lack the experience predicting the effect of these changes.

Some of the materials used in our weapons, like plutonium, enriched uranium, and tritium, are radioactive materials that decay, and as they decay they also change the properties of other materials within the weapon. We lack experience predicting the effects of such aging on the safety and reliability of our weapons.

We did not design our weapons to last forever. The shelf life of our weapons was expected to be about 20 years. In the past, we did not encounter problems with aging weapons, because we were fielding new designs and older designs were retired. But under the CTBT, we could not field new designs to replace older weapons, because testing would be required to develop new designs.

Remanufacturing components of existing weapons that have deteriorated also poses significant problems. Over time, manufacturing processes will change, some chemicals previously used in the production of our weapons have been banned by environmental regulations, and our documentation of the technical characteristics of older weapons, in some cases, is incomplete. Furthermore, as James Schlesinger—who formerly served as Secretary of defense and Secretary of Energy—has testified to the Senate, the plutonium pits in some of our weapons are approaching the end of this life-span. According to Dr. Schlesinger, one of our national laboratories estimates the pits used in some of our weapons will last 35 years. Since many of the pits used in the current arsenal are about 30 years old, this means that we will soon need to replace these pits. But without testing, we will never know if these replacement parts will work as their predecessors did.

As the former Director of the Lawrence Livermore National Laboratory, Dr. John Nuckolls said last month in a letter to me:

> Key components of nuclear warheads are ''aging'' by radioactive decay and chemical decomposition and corrosion. Periodic remanufacture is necessary, but may copy existing defects and introduce additional defects. Some of the remanufactured parts may differ significantly from the original parts—due to loss of nuclear test validated personnel who manufactured the original parts, the use of new material and fabrication processes, and inadequate specification of original parts. There are significant risks of reducing stockpile reliability when remanufactured parts are involved in warhead processes where there are major gaps in our scientific understanding.

The fact is that, despite our technical expertise, there is much we still do not understand about our own nuclear weapons. As C. Paul Robinson, Director of the Sandia National Laboratory has aid, ''some aspects of nuclear explosive design are still not understood at the level of physical principles.''

These gaps in our knowledge do not merely present a theoretical problem. 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.''

Furthermore, in 1987, Lawrence Livermore Lab produced a report titled ''Report to Congress on Stockpile Reliability, Weapon Remanufacture, and the Role of Nuclear Testing'' in which it extolled the importance of testing, noting that ''. . . there is no such thing as a 'thoroughly tested' nuclear weapon.'' The report also goes on to state that of the one-third of weapons designs introduced into the stockpile since 1958 that have required testing to fix, ''In three-fourths of these cases, the problems were discovered only because of the ongoing nuclear testing.'' This report went on to say that ''Because we frequently have difficulty understanding fully the effects of changes particularly seemingly small changes on the nuclear performance, nuclear testing has been required to maintain the proper functioning of our nation's deterrent.''

Secretary of Defense Caspar Weinberger summed this point up nicely in 1986 when he said:

> The irreducible fact is that nuclear testing is essential to providing for the safety and security of our warheads and weapons systems. It also is essential if we are to maintain their reliability. This is not a matter of conjecture, but a lesson learned through hard experience. For example, in the case of one nuclear system—the warhead for the Polaris [SLBM]—testing allowed us to fix defects that were suddenly discovered. Until corrected, these defects could have rendered the vast majority of weapons in our sea-based deterrent completely inoperable.

The importance of testing to the maintenance of any complex weapon or machine cannot be underestimated. As the six former Secretaries of Defense noted in this letter opposing the CTBT,

> 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 Clinton administration has proposed a program that it hopes will replace actual nuclear tests with computer simulations and a much greater emphasis on science-based experiments. It is called the Stockpile Stewardship Program. According to the Fiscal Year 2000 Stockpile Stewardship Plan Executive Overview, released by the Department of Energy in March this year:

> The overall goal of the Stockpile Stewardship program is to have in place by 2010 . . . the capabilities that are necessary to provide continuing high confidence in the annual certification of the stockpile without the necessity for nuclear testing.

I support the Stockpile Stewardship Program because it will improve our knowledge about our nuclear weapons. But as former Secretary of State Henry Kissinger, former National Security Advisor Brent Scowcroft, and former CIA Director John Deutch said in a letter this week, ''the fact is that the scientific case simply has not been made that, over the long term, the United States can ensure the nuclear stockpile without nuclear testing.''

First, the Stockpile Stewardship Program faces tremendous technical challenges. As the Director of Sandia National Laboratories, Dr. Robinson has said, ''the commercially available and

laboratory technologies of today are inadequate for the stockpile stewardship tasks we will face in the future. Another hundred-to-thousand-fold increase in capability from hardware and software combined will be required.''

Dr. Victor Reis, the architect of the stewardship program, said this about it during a speech in Albuquerque:

Think about it—we are asked to maintain forever, an incredibly complex device, no larger than this podium, filed with exotic, radioactive materials, that must create, albeit briefly, temperatures and pressures only seen in nature at the center of stars; do it without an integrating nuclear test, and without any reduction in extraordinarily high standards of safety and reliability. And, while you're at it downsize the industrial complex that supports this enterprise by a factor of two, and stand up critical new manufacturing processes.

This within an industrial system that was structured to turn over new designs every fifteen years, and for which nuclear explosive testing was the major tool for demonstrating success.

Senior officials at the Department of Energy and our nuclear labs are generally careful in how they couch their remarks about the Stockpile Stewardship Program. They typically state that the stewardship program is the best approach to maintaining our weapons in the absence of testing. But they are also careful not to guarantee that, despite the unquestioned brilliance of the scientists, the Stockpile Stewardship Program will succeed in replacing testing.

In fact, the Stockpile Stewardship Program has already experienced setbacks. For example, the National Ignition Facility, which is the linchpin of the program, has recently fallen behind schedule and is over budget. It still faces a critical technical uncertainty about a major goal of its design: will it be able to achieve thermonuclear ignition?

Another problem with relying on computer simulation to replace testing is the increased risk of espionage. Former Lawrence Livermore National Lab Director John Nuckolls made this point in his letter to me as well: ''Espionage is facilitated when U.S. progress is frozen, and classified information is being concentrated and organized in electronic systems.'' In short, in order to achieve the vast increases in computing power required for the stewardship program, much of the computer code required for the program will be written by hundreds of people at participating universities and colleges—in many cases by people who are not even American citizens.

Mr. President, the bottom line is that a credible nuclear deterrent is just too important to put all our eggs in the stewardship basket.

In addition to impairing the reliability of our nuclear arsenal, the CTBT will prevent us from making our nuclear weapons as safe as they can be. This is extraordinarily important.

Nuclear weapon safety has always been a paramount concern of the United States. Throughout the history of our nuclear weapons program, we have made every effort to ensure that even in the most violent of accidents there would be the minimum chance of a nuclear explosion or radioactive contamination. The results of such an accident would be catastrophic.

That's why President Clinton's Secretary of Defense, Bill Cohen, opposed a test moratorium when he was a Senator. During debate on an amendment imposing a moratorium on testing, August 3, 1993, then-Senator Cohen said,

A vote to halt nuclear testing today is a vote to condemn the American people to live with unsafe nuclear weapons in their midst for years and years—indeed until nuclear weapons are eliminated. Not just a few unsafe nuclear weapons, but a nuclear stockpile in which most of the weapons do not have critical safety features.

I digress a moment to note when he was asked about this statement this week, now-Secretary Cohen said, we have replaced those weapons with weapons in our inventory now that are safe.

I know defense Secretary Cohen would agree, that is not a correct statement. All of the weapons in our current inventory lack one or more of the essential safety features that we have been talking about here.

As the Director of Los Alamos National Lab, Dr. Sig Hecker, indicated in a letter to me in 1997, ''with a CTBT it will not be possible to make some of the potential safety improvements for greater intrinsic warhead safety that we considered during the 1990 time frame.'' The reason is that nuclear tests must be done in many cases to confirm that once new safety features are incorporated, the weapons are reliable and still operate as intended. The CTBT makes it pointless to try to invent new, improved safety features because they could not be adopted without nuclear testing. Even worse, the CTBT eliminates the possibility of improving the safety of current weapons through the incorporation of existing, well understood safety features.

Safety features include items such as insensitive high explosive and fire resistant pits. Insensitive high explosive in the primary of a nuclear weapon is intended to prevent the premature detonation of the high explosive trigger, resulting in a potential nuclear explosion should the weapon be subjected to unexpected stress, like being dropped or penetrated by shrapnel or a bullet. Fire resistant pits are intended to prevent the dispersal of plutonium resulting in radioactive contamination of an area should the weapon be exposed to a fire, such as an accidental blaze during loading of a weapon on an aircraft.

Unfortunately, few people know that many of our current weapons do not contain all the safety features that already have been invented by our National Laboratories. Only one of the nine weapons in the current stockpile incorporates all six available safety features. In fact, three of the weapons in the stockpile—the W78 warhead, which is used on the Minuteman III ICBM, and the W76 and W88 warheads, which sit atop missiles carried aboard Trident submarines—incorporate only one of the six safety features. Another weapon, the W62 warhead, does not have any of the six safety features incorporated into its design.

The bottom line is that a ban on nuclear testing prevents us from making our weapons as safe as we know how to make them and creates a disincentive to making such safety improvements.

Mr. President, another point I think is extraordinarily important as we debate this CTBT is that the purpose of the treaty cannot be achieved by its ratification. In addition to undermining our nuclear deterrent, as I have just spoken to, the treaty will not achieve its goal of halting nuclear proliferation.

Supporters of the treaty say the United States must lead by example, and that by halting nuclear tests ourselves, we will persuade others to follow our example. Yet the history of the last eight years shows this theory is false. Since the United States halted testing in 1992, India, Pakistan, Russia, China, and France have all conducted tests.

Furthermore, the CTBT will not establish a new international norm against nuclear weapons testing or possession. The Nuclear Nonproliferation Treaty, the NPT ratified by 185 countries has already established such a norm. The NPT calls for parties to the treaty, other than the five declared nuclear powers—the United States, the United Kingdom, Russia, China, and France—to pledge not to pursue nuclear weapons programs.

Yet North Korea and Iraq, to name two who are parties to the NPT, have, of course, violated it. They have pursued nuclear weapons programs despite their solemn international pledge never to do so. The CTBT will not add anything useful to the international nonproliferation regime since these nations, in effect, would be pledging not to test the nuclear weapons they have already promised never to have under the NPT. So much for the international norm.

Nor will the CTBT pose a significant impediment to the acquisition of nuclear weapons by rogue nations since, although nuclear testing is essential to maintaining the sophisticated nuclear weapons in the U.S. arsenal today, it is not required to develop relatively simple first-generation nuclear devices, like those needed or being developed by Iran and Iraq. For example, the United States bomb dropped on Hiroshima was never tested, and the Israeli nuclear arsenal has been constructed without testing.

Incidentally, the Clinton administration does not dispute this point. In Senate testimony in 1997, CIA Director George Tenet stated:

Nuclear testing is not required for the acquisition of a basic nuclear weapons capability (i.e. a bulky, first-generation device

with high reliability but low efficiency.) Tests using high-explosive detonations only ([with] no nuclear yield) would provide reasonable confidence in the performance of a first generation device. Nuclear testing becomes critical only when a program moves beyond basic designs to incorporate more advanced concepts.

I believe Director Tenet is absolutely correct, based on the letter of the Secretary of Defense that I quoted earlier. We can't afford to underestimate the weapon described by Director Tenet—a ''bulky, first generation device with high reliability but low efficiency'' is a lot like the bomb we dropped on Hiroshima to change world history. It is a strategic weapon—if North Korea or Iran were able to deploy such a weapon, they could—to put it mildly—severely reduce our ability to protect our interests in East Asia or the Persian Gulf. These are weapons that would be designed to intimidate and kill large numbers of people in cities, not destroy purely military targets, as the United States weapons are designed to do.

Another problem with the CTBT is that it is totally unverifiable. It cannot be verified despite the vast array of expensive sensors and detection technology being established under the treaty, so it will be possible for other nations to conduct militarily significant nuclear testing with little or no risk of detection. Effective verification requires high confidence that militarily significant cheating will be detected in a timely manner. The United States cannot now, and will not in the near future, be able to confidently detect and identify militarily significant nuclear tests of one kiloton or less by the way, that is roughly 500 times larger than the blast which destroyed the Murrah Building in Oklahoma City. We cannot detect a test of that magnitude.

What is ''militarily significant'' nuclear testing? Definitions of the term might vary, but I think we'd all agree that any nuclear test that gives a nation information to maintain its weapons or to develop newer, more effective weaponry is militarily significant.

In the course of U.S. weapons development, nuclear tests with yields between 1 kiloton and 10 kilotons have generally been large enough to provide ''proof'' data on new weapons designs. Other nations might have weaponry that could be assessed at even lower yields. As we know, crude but strategically significant weapons, like the bomb we dropped on Hiroshima, don't need to be tested at all. But for the sake of argument, let's be conservative and assume that other nations would also need to conduct tests at a level above 1 kiloton to develop a new nuclear weapon design.

The verification system of the CTBT is supposed to detect nuclear blasts above 1 kiloton, so it would seem at first glance that it will be likely that most cheaters would be caught. But look at the Treaty's fine print—the CTBT's International Monitoring System will be able to detect tests of 1 kilotons or more if they are nonevasive. This means that the cheater will be caught only if he does not try to hide his nuclear test.

But what if he does want to hide it? What if he conducts his test evasively?

It is a very simple task for Russia, China, or others to hide their nuclear tests. One of the best known means of evasion is detonating the nuclear device in a cavity such as a salt dome or a room mined below ground. Because it surrounds the explosion with empty space, this technique—called decoupling—reduces the noise, or the seismic signal, of the nuclear detonation.

The signal of a decoupled test is so diminished—by as much as a factor of 70—that it will not be possible to reliably detect it. For example, a 1,000-ton hidden test would have a signal of a 14-ton open test. This puts the signal of the illicit test well below the threshold of detection.

Decoupling is a well-known technique and is technologically simple to achieve. In fact, it is quite possible that Russia and China have continued to conduct nuclear testing during the past 7 years, while the United States has refrained from doing so. They could have done so by decoupling.

There are also other means of cheating that can circumvent verification. One is open-ocean testing. A nation could put a device on a small boat or barge, tow it into the ocean, and detonate it anonymously. It would be virtually impossible to link the test to the cheater.

While evasive techniques are expensive and complex, the costs are relatively low compared to the expense of a nuclear weapons program, and no more complicated than weapons design. Further, established nuclear powers are well positioned to conduct clandestine testing to assure the reliability and undertake at least modest upgrades of their arsenals. Russia and China do not have good records on compliance with arms control and nonproliferation commitments. In addition, according to the Washington Times, United States intelligence agencies believe China conducted a small underground nuclear test in June and Russia is believed to have conducted a nuclear test earlier this month. While neither country has ratified the CTBT, both have signed the treaty and have promised to adhere to a testing moratorium. Again, so much for the norm.

The bottom line is that a determined country has several means to conceal its weapons tests and the CTBT is not effectively verifiable.

Let me stress here that my assessment is not based on opinions. Our inability to verify a whole range of nuclear testing is well-known and has been affirmed by the U.S. Intelligence Community. As the Washington Post reported earlier this week, our intelligence agencies lack the ability to confidently detect low-yield tests. We would be irresponsible in the extreme to ratify an unverifiable arms control treaty—especially when that treaty will inevitably reduce our confidence in our own nuclear deterrent.

President Clinton's first Director of the Central Intelligence Agency, James Woolsey, summed up the problems with verification of the treaty stating in Senate testimony that,

> I believe that a zero-yield Comprehensive Test Ban Treaty is extraordinarily difficult, to the point of near impossibility—and possibly to the point of impossibility—to verify from afar.

In addition to the negative consequences that would result from treaty ratification, I would also point out that this accord is very poorly crafted. The CTBT is weakest at its very foundation—it actually fails to say what it bans. Nowhere in its 17 articles and 2 annexes are the terms ''nuclear weapon test explosion'' or ''nuclear explosion'' defined or quantified and these are the terms used in the treaty's basic obligations.

Acting Under Secretary of State John Holum admitted this point in responses to questions for the record on June 29 of this year stating:

> The U.S. decided at the outset of negotiations not to seek international agreement on a definition of ''nuclear weapon test explosion'' in the Treaty text. The course of negotiations confirmed our judgment that it would have been extremely difficult, and possibly counterproductive, to specify in technical terms what is prohibited by the Treaty.

May I read that again:

> The course of negotiations confirmed our judgment that it would have been extremely difficult, and possibly counterproductive, to specify in technical terms what is prohibited by the Treaty.

But another nation might choose to apply a less restrictive definition and conduct very low-yield testing, what we call hydronuclear testing. While the United States interprets the treaty to ban all nuclear explosives testing—that is why they call it a zero ban test—other nations could conduct very low-yield testing, as I said, which we could not verify but which they would consider in compliance with the treaty. This so-called hydronuclear testing is very useful to nuclear weapons programs by helping improve the understanding of fundamental nuclear weapons physics, develop new weapons concepts, ascertain existing weapons' reliability, and exercise the skills of scientists, engineers, and technicians. The nuclear energy released in a hydronuclear test can be less than the equivalent released by four pounds of conventional high explosives. This is virtually nothing, and such a low-yield test would almost certainly escape detection.

This is where the treaty's vagueness is actually harmful to our interests. Even if we were able to detect it, the nation conducting a hydronuclear test could simply argue that it was legal under the treaty. And they would have the historical CTBT negotiating record on their side. Many drafts of the CTBT

prior to the Clinton administration allowed for low-yield ''permitted experiments.''

The verification regime of the CTBT—centered around the International Monitoring System, or IMS—will not be able to detect tests with far greater yields than hydronuclear tests. These tests can be conducted with virtually no risk of detection by either the IMS system or U.S. technical means.

There is much more to say about this treaty, but I believe I have outlined the primary reasons why the only prudent course for the Senate is to reject the CTBT. It will jeopardize rather than enhance our national security. It will undermine our vital nuclear deterrent by jeopardizing the reliability of our nuclear stockpile. It will prevent us from making our weapons as safe as they can be. It will not stop nuclear proliferation, and it is not verifiable. It is not worthy of Senate approval.

The PRESIDING OFFICER (Mr. GORTON). The Senator from Delaware.

Mr. BIDEN. Mr. President, I am anxious to respond point by point to my friend. I suggest, to believe his arguments, as the old saying goes, requires the suspension of disbelief. I find them to be well intended but half true. I will be very specific about each one of them, beginning with this notion of the value of deterrence.

I find it fascinating, my colleagues talk about these other nations can have a Hiroshima-type bomb and build without testing and that would radically affect our security; yet we cannot rely in the future on our certainty of 6,000 sophisticated nuclear weapons in the stockpile. I urge my friends to read today's New York Times and Washington Post where our allies are apoplectic about the fact my colleagues are going to reject this treaty.

The absolute notion that this idea is—don't let them kid you about this debate, folks, anybody watching this. You do not have to be a nuclear scientist to understand. You do not have to be a sophisticated foreign policy specialist to grasp what is at stake.

Think of it this way when they tell you the security of our nuclear stockpile is going to become so unreliable over time, that, as Dr. Schlesinger has said and my friend from Arizona has alluded, our enemies are going to know we do not have confidence in it and that is going to embolden them, and our allies such as Germany and Japan are going to go nuclear because they cannot count on us.

That is fascinating. Why did all of our allies sign and ratify this treaty? Why are they apoplectic about the prospect that we will not sign this treaty? I ask my colleagues when is the last time they can remember the Prime Minister of Great Britain or the President of France saying publicly: My Lord, I hope the Senate doesn't do that.

You cannot have it both ways. This is an argument that I find absolutely preposterous. Although one can technically make it, it does require the suspension of disbelief in order to arrive at that conclusion.

One has to be an incredible pessimist to conclude that the 6,000 nuclear weapons configured in nine different warheads are going to atrophy after spending $45 billion over the next 10 years, and after having been able to certify without testing for the last 3 years that it is in good shape, that some nation is going to say: We got them now, guys; I know they don't believe their system is adequate; maybe one of those bombs won't go off, maybe 10 of them, maybe 100 of them, maybe 1,000 of them, maybe 3,000 of them.

We still have 3,000 left. Back when the Senator from Nebraska and I were kids and Vietnam was kicking up, we used to see bumper stickers: One atom bomb can ruin your day.

I am going to go into great detail on every point my friend raised and talk about, for example, the idea we cannot modernize these weapons when we find a defect; we cannot deal with them without testing.

Dr. Garwin yesterday—one of the most brilliant scientists we have had, who has been involved in this program since 1950—says, you can replace the whole physics package without changing.

By the way, I am going to yield to my friend from Pennsylvania.

Names are mentioned here: Dr. Robinson, of Sandia; Victor Reis, the architect of the program, whom I spent 2½ hours with the other day. They do not tell you the end of the sentence. The end of the sentence is: They both are for this treaty. They both are for this treaty, along with 32 Nobel laureates in physics. I ask unanimous consent that the list be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as 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; Bal L. Fitch, Princeton Unversity, 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, 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, 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.

Mr. BIDEN. Five of the last six Chairmen of the Joint Chiefs of Staff are for this treaty, along with people such as Paul Nitze of the Reagan administration, Stansfield Turner, Charles Curtis, and so on. I ask unanimous consent that a list of those in support of the treaty be printed in the RECORD

There being no objection, the material was ordered to be printed in the RECORD, as follows:

PROMINENT INDIVIDUALS AND NATIONAL GROUPS IN SUPPORT OF THE CTBT

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. Beilenson.
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.

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.

Busienss 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.

Popualtion Action Institute.

Population action International.

Psychologists for Social Responsibility.

Public Citizen.

Public Education Center.

Safeworld.

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 Resistors 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 of Church in Society, Evangelical Lutheran Church in America.

Division for Congressional 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.

Sources: Coalition to Reduce Nuclear Dangers and Statement by President Clinton, 7/20/99.

Mr. BIDEN. Mr. President, this idea that the stockpile is not going to be reliable, that you can't—we have thousands of parts, and the Russians have missiles with bombs with only 100 parts, and that has some significance. I have said it before.

I will yield now. I used to practice law with a guy named Sidney Balick—a good trial lawyer. Every time he would start a jury trial, he would start off by saying: I want you to take a look at my client. I want you to look at him. They're going to tell you he's not such a good looking guy. He's not. They're going to tell you you would not want to invite him home for dinner to meet your daughter. I wouldn't either. They're going to tell you—and he would go on like that. But he would say: I want you to keep your eye on the ball. Keep your eye on the ball. Follow the bouncing ball. Did he kill Cock Robin? That is the question.

The question is, At the end of the day, if we reject this treaty, are we better off in terms of our strategic interest and our national security or are we better off if we accept and ratify the treaty that all our allies have ratified? Which is better? Keep your eye on the ball.

I will respond, as I said, in due time to every argument my friend has made, from ''the safety features argument'' to ''the purpose can't be achieved'' to ''nations that don't have sophisticated weapons are going to be able to cheat,'' and so on and so forth. But in the meantime, out of a matter of comity, which is highly unusual, because I should do a full-blown opening statement, I will yield to my friend from Pennsylvania because he has other commitments. Then I will come back to a point-by-point rebuttal of the statement by my friend from Arizona.

How much time is the Senator seeking?

Mr. SPECTER. I think I can do it in 20 minutes. It might take a little longer.

Mr. BIDEN. It can't take any longer. I will yield 20 minutes to the Senator.

PRIVILEGE OF THE FLOOR

I ask unanimous consent that Patrick Cottrell be able to be on the floor for the remainder of this debate.

The PRESIDING OFFICER. Without objection, it is so ordered.

The Senator from Pennsylvania.

Mr. SPECTER. I thank the Senator from Delaware for yielding me time at this time.

Mr. President, this debate on the Comprehensive Test Ban Treaty may one day be classified as a historic debate. The issue which is being framed today, in my opinion, is the most important treaty issue, international issue which has faced this Senate since the Treaty of Versailles, which was rejected by the Senate, setting off an era of isolationism and, for many, enormous international problems resulting in World War II.

It is my hope this treaty will be ratified. I do not expect it to be ratified in a vote on Tuesday because the picture is clear that there are not enough Senators to provide the two-thirds constitutional balance. But it is my hope before that scheduled vote arises on Tuesday that we will have worked out an operation to defer the vote on this treaty.

I agree with my distinguished colleague from Arizona, Senator KYL, that a nuclear deterrent is vital for the national security of the United States. When he cites the Comprehensive Test Ban Treaty as being negotiated by the Clinton administration—really an idea of the Clinton administration—I would point to the statements of President Eisenhower more than 40 years ago when he articulated the national interest in a comprehensive test ban treaty.

In a speech on August 22, 1958, President Eisenhower said this:

> The United States . . . is prepared to proceed promptly to negotiate an agreement with other nations which have tested nuclear weapons for the suspension of nuclear weapons tests. . . .

In a very succinct statement in a letter to Bulganin, on January 12, 1958, President Eisenhower said:

> . . . that, as part of such a program which will reliably check and reverse the accumulation of nuclear weapons, we stop the testing of nuclear weapons, not just for two or three years, but indefinitely.

It is hard to give a more emphatic bipartisan flavor than President Eisenhower's specific statements.

When the Senator from Arizona cites a list of six preeminent former Secretaries of Defense, I say that is, indeed, impressive. I would look to the assurances which we have today from Gen. Hugh Shelton, the Chairman of the Joint Chiefs of Staff, and the Secretary of Defense, William Cohen, in analyzing the two basic issues which have been set forth in the parameters by Senator KYL. And they are: Can we assure stability of our stockpile? Can we reasonably verify compliance by others?

There is a balance of risks. There is no test which will be absolute in its terms. But the essential question on balancing the risks and balancing the judgment is whether we would be better off with the Comprehensive Test Ban Treaty or without it.

The United States has an enormous lead on nuclear weapons. We have the nuclear deterrent. We have seen other nations—India and Pakistan—starting the test process. We have reason to be gravely concerned about North Korea's capacity with nuclear weapons. We worry about rogue nations such as Iraq, Iran, Libya, and others. So that, at least as I assess the picture, on a balance of risks, we are much better off if we limit testing than if we proceed to have testing.

The Stockpile Stewardship Program, I think, is reasonably effective. Is it perfect? No, it is not. The issue of verification, I think, is reasonably effective. It does not get some of the low-yield weapons. And activities are underway to try to solve that.

Secretary of Energy Richardson was in Moscow within the past week working with the Soviets on the so-called transparency test—illustrative of one of the efforts among many being undertaken to narrow the gap on verification. But again, it is a matter of balancing the risks. With or without the treaty, where are we better off?

I had an occasion to talk to Gen. Hugh Shelton, Chairman of the Joint Chiefs of Staff, earlier this week. I asked General Shelton the details of these questions, about the stability of our nuclear stockpile and the verification procedures. General Shelton said that we were in good shape on both issues.

Then I asked General Shelton the obvious question: Was his view, was his judgment colored to any extent by being in the administration of President Clinton as President Clinton's Chairman of the Joint Chiefs of Staff? It is not unheard of for even four-star generals to be a little concerned about what the Commander in Chief might prefer. General Shelton looked me in the eye and said: Senator, these are my honest views. If they weren't, I wouldn't state them; and rather than state views I didn't believe in, I could always retire.

I had occasion to talk at some length with Secretary of Defense William Cohen. It is true, as the Senator from Arizona outlines, at one point then-Senator Cohen had a different view. And as Secretary Cohen testified in hearings this week, a number of factors have led him to a different conclusion.

The question might also be raised as to whether the Commander in Chief of the Secretary of Defense might color, to some extent, his views. I am satisfied that Bill Cohen, with whom I worked in this body for some 16 years, would not put America at risk if he didn't believe what he said, that this Comprehensive Test Ban Treaty, balancing all considerations, was appropriate.

Once moving beyond the study of the treaty, which I have done, having announced my support for the treaty some time ago, after study and after looking at some of the experts, the question, in my judgment, is essentially a political question. I believe the lessons of history support arms control. That is a view I have held for some time.

I started my own personal studies of the United States-Soviet relations as a college senior, majoring in international relations at the University of Pennsylvania, and wrote my college thesis on United States-U.S.S.R. relations. One of the first resolutions I offered, coming to the Senate in early 1982, was a resolution for arms control. In 1982, Senators were pretty well lined up on philosophical grounds, those who favored arms control and those who did not favor arms control.

I recall that as a very tough debate against the chairman of the Armed Services Committee, John Tower. Who