

cause to enact policies empowering victims. In my estimation, the accused should see their victim's face in a court of law and know they scarred a life forever. I believe this legislation drafted on a bipartisan basis will entitle victims of crime their overdue rights and merits widespread support.

GLOBAL CLIMATE CHANGE

• Mr. HOLLINGS. Mr. President, I rise today as a supporter and cosponsor of Senator BYRD's sense-of-the-Senate resolution, Senate Resolution 98, regarding ratification of any international agreement on greenhouse gas emissions under the United Nations Framework Convention on Climate Change. Back in 1992, the United States and the rest of the world agreed to work, on a voluntary basis, to reduce greenhouse gas emissions which scientists believed could affect climate and sea levels over the next century. Unfortunately, this agreement, aimed at returning greenhouse gas emissions to 1990 levels, has failed.

Now, the administration is negotiating an agreement aimed at meeting this 1990 level. Instead of requiring countries, all countries—developed, developing, and underdeveloped—to agree on voluntary efforts, these negotiations are focused on making the 1990 level mandatory for only developed countries. In short, it will increase the burden of compliance on the United States and other developed countries, while doing nothing to ensure that developing countries meet these targets.

Yes, the United States and other developed countries are responsible for the bulk of these emissions but that will not always be the case. Many developing countries, such as China, Mexico, India, and Brazil, are on course to surpass United States emissions. It makes no sense to give these countries a pass. I am not saying the United States should not do its fair share, we should. My concern is that the agreement is shortsighted. Failing to include these developing countries does nothing to head off the emission problems which they will soon face.

In addition, I have a long record of defending the American worker and American industry from unfair business and trade practices overseas—many of which occur in these developing countries. My fear is that failing to include developing nations in this agreement will undermine America's ability to compete internationally and will only work to force American industry overseas to these developing areas. America has the strongest economy in the world. I want to ensure it remains that way. Placing the burden of reducing greenhouse gas emissions only on developed countries and ignoring developing countries will do nothing to secure economic stability.

In short, this resolution calls for the United States to refuse to sign any agreement unless the developing countries are included in a legally binding

regime of emission control measures. It is an effort to ensure that all countries are placed on a level playing field.

With regard to my record on environmental issues, there have been some who have asked if my support of Senate Resolution 98 undermines my long record of supporting efforts to clean and protect our environment. Let me say now, it does not. In my opinion, this resolution will strengthen efforts to reduce worldwide greenhouse gas emissions by ensuring that all countries meet the same standards.

In closing, I submit for the RECORD the authoritative and expert opinion of Dr. James B. Edwards, the former Secretary of Energy, and encourage my colleagues to read his opinions on this matter.

The material follows:

POURING GAS REDUCTIONS DOWN DRAIN

If a new climate treaty to include binding restrictions on the emission of greenhouse gases is a bad idea—and it is—then the immediate consequence of such a move is even worse: that a tax is imposed on U.S. industries that burn oil, gas and coal. The cost would ultimately fall on American consumers—without necessarily providing benefits to anyone if other countries continue to pollute.

The logical conclusion should be: Don't make the first blunder so you are not forced into making the even worse second blunder. But in just seven months an agreement on a new climate treaty could be a done deal. If government commitments made at the latest round of negotiations in Europe are any indication, there could be a treaty in place by December. There is just one problem: U.S. ratification is going to take a two-thirds vote of the Senate eventually.

In the view of climatologists as esteemed as Patrick Michaels of the University of Virginia, an expert on computer simulations of the climate, and the University of Alabama's John Christy, it will take decades before scientists gain a comprehensive understanding of how greenhouse gas emissions affect the earth's climate. One thing scientists do know is that the concentration of greenhouse gases is building up slowly—less than 0.5 percent annually for carbon dioxide—and that gives us time to implement effective mitigation measures.

Unfortunately, the proposed treaty places binding commitments on industrial nations but none on developing countries. Even such economic powerhouses as China, Korea, and Indonesia would be let off the hook, while the United States would be required to cut greenhouse-gas emissions 15 to 20 percent by 2010 or soon thereafter. Such self-imposed restrictions could backfire.

Simply put, the danger is that developing countries will have no incentive to reduce emissions. Their output would overwhelm reductions made by industrial nations—just the opposite of what a new treaty is supposed to achieve. In fact, developing countries, as a group, are expected to produce the majority of greenhouse emissions in future years.

According to a report by the U.S. Department of Energy, efforts to restrict fossil fuel emissions with a carbon tax would do serious damage to our economy. The hardest hit would be energy-intensive industries, especially petroleum refining, chemicals, automobile manufacturing, paper products, iron and steel, aluminum and cement. These large industries would be at a disadvantage in the world marketplace, and the cost in dollars, as well as in lost jobs, would be staggering.

The most responsible economic estimates of the cost to cap carbon dioxide emissions

at 1990 levels by the year 2010 or soon thereafter range from \$250 billion to \$300 billion per year—an amount that would reduce the U.S. gross domestic product by about 4 percent. For comparison, that's nearly equal to what was spent last year on Social Security.

This is not to suggest that the United States should do nothing about reducing greenhouse-gas emissions. When major industrialized countries meet in Denver in late June at the "Group of Seven" economic summit, climate change will be on the agenda. Efforts should be directed toward establishing a flexible route that could achieve the same long-term benefits but at far lower cost. For example, spreading the responsibility globally, possibly through an emissions trading system involving developing countries, would lower the cost substantially.

Under an emissions trading system, any country exceeding its allotment of greenhouse emissions, pays a regulatory fine. The significant differences between this plan and a carbon tax are that technological innovation, market mechanisms and total global emissions are the defining characteristics of this alternative approach to reducing greenhouse emissions.

Major efforts should be directed at exporting advanced power systems to developing countries such as China and India so that they can begin to stabilize their emissions, without depriving them of an opportunity for economic growth. After all, as its share of industrial output rises, China is expected to become the world's largest source of carbon dioxide, emitting nearly double the amount the United States emits and more than triple what Western Europe produces.

It's very simple: Before we hobble our economy and our society with costly new regulations and taxes we should ask ourselves whether the hoped-for benefits justify the cost to our economy and whether there is a better alternative. And environmentalists ought to keep another perspective mind: For any global emissions reduction program to succeed, all nations must participate.●

HANS A. BETHE

• Mr. MOYNIHAN. Mr. President, the great Nobel physicist, Hans A. Bethe, is the subject of the lead article in the "Science Times" section of the New York Times. One cannot help but marvel at the life Dr. Bethe, a national treasure, has led. In 1935, he fled Nazi Germany, settling at Cornell University in Ithaca, New York. Within three years, he developed an equation to explain solar fusion which won him a Nobel prize in 1967.

Hans Bethe led the Theoretical Division at Los Alamos; he was, one could say, present at the creation. He stood next to J. Robert Oppenheimer on July 16, 1945 in the New Mexico desert, a witness to the testing of the first atomic bomb. The scientists at the site knew that if the test worked it would end World War II, as it did within a month, and forever change the nature of warfare.

At the moment of that explosion, a new era began. It changed us. Changed the world, and changed all those present. Maurice M. Shapiro, now chief scientist emeritus of the Laboratory for Cosmic Physics at the Naval Research Station, in Washington, recalled the scene in the New Mexico desert in an interview two years ago:

At precisely 5:30 there was a blinding flash—brighter than many suns—and then a flaming fireball. Within seconds a churning multicolored column of gas and dust was rising. Then, within it, a narrower column of debris swirled upward, spreading out into an awesome mushroom-shaped apparition high in the atmosphere—Maurice M. Shapiro, "Echoes of the Big Bang," *New York Times*, July 15, 1995.

Next came "an oppressive sense of foreboding."

Oppenheimer described the event as follows:

We waited until the blast had passed, walked out of the shelter and then it was extremely solemn. We knew the world would not be the same. A few people laughed, a few people cried. Most people were silent. I remembered the line from the Hindu scripture, the Bhagavad-Gita: Vishnu is trying to persuade the Prince that he should do his duty and to impress him he takes on his multi-armed form and says, "Now I am become Death, the destroyer of worlds." I suppose we all thought that, one way or another.

Hans Bethe's role in shaping United States nuclear policy had only just begun. For the past fifty years, he has involved himself in thoughtful and constructive efforts to develop responsible policies to deal with this technology he played such a crucial role in creating. The article in today's *New York Times*, for instance, characterizes him as a "prime mover behind the first East-West arms accord, the 1963 Limited Test Ban Treaty, which ended nuclear explosions in the atmosphere." And just a few months ago—on April 25—he wrote the President an historic letter which states:

It seems that the time has come for our Nation to declare that it is not working, in any way, to develop further weapons of mass destruction of any kind.

Mr. President, Dr. Bethe is one of our living treasures. It is entirely fitting that his many contributions to society are publicized and studied, and that his policy pronouncements are accorded the attention they so deserve, for as the author of the *Times* article, William J. Broad, states, Bethe's voice may be gentle, but his words are sharp. I hope that Dr. Bethe will soon complete work on his autobiography and share with us the breadth of his life experiences.

I ask that the article in the *New York Times*, the letter from Dr. Bethe to the President, and the President's response be printed in the RECORD.

The material follows:

[From the *New York Times*]

HE LIT NUCLEAR FIRE; NOW HE WOULD DOUSE IT

(By William J. Broad)

"For the things I do, it's accurate enough," Dr. Hans A. Bethe said as he rummaged through his briefcase and pulled out a slide rule, a relic from the days before computers took over tedious number-crunching for most scientists. It's battered case told of considerable use.

What Dr. Bethe does at the age of 90, and has done for more than seven decades, is ponder such riddles of nature as how stars live and die. It is his passion. Once it won him a Nobel Prize in Physics and now it keeps him excited and in his office at Cornell Univer-

sity, where he arrived more than 60 years ago after fleeing Nazi Germany.

A combination lock on a metal cabinet hints at what else he does, his sideline, as he puts it, an avocation of more than a half century that helped change history. The atomic bomb.

Dr. Bethe knows how it lives—having overseen its birth during the World War II, having felt its blistering heat across miles of desert sand, having watched its progeny fill superpower arsenals—and now he is working hard to make it die.

In April, he wrote a letter to President Clinton that some advocates of arms control regard as historic. As the most senior of the living scientists who begat the atomic age, Dr. Bethe called on the United States to declare that it would forgo all work to devise new kinds of weapons of mass destruction.

But his dream, it turns out, is larger than that, much larger. In an interview last week, Dr. Bethe said that a concerted push by the world's nations and people might yet cut nuclear arsenals down from their current levels of thousands of arms to perhaps 100 in the East, 100 in the West and few in between.

"Then," added this survivor of Hitler and Mussolini, his voice gentle but words sharp, "even if statesmen go crazy again, as they used to be, the use of these weapons will not destroy civilization."

Eventually, perhaps late next century, Dr. Bethe said, the right social conditions may finally arise so that the bomb is no more, so that no nation on earth will want to wield the threat of nuclear annihilation. The nightmare will be over.

He paused.

"That is my hope," he said. "My fear is that we stay where we are," with each side keeping thousands of nuclear arms poised to fly at a moment's notice. "And if we stay where we are, then additional countries will get nuclear weapons" and the earth may yet blaze with thermonuclear fire, the kind that powers stars and destroys most everything in its path.

Hans Albrecht Bethe (pronounced BAY-ta) was born on July 2, 1906, in Strasbourg, Alsace-Lorraine. His father, a physiologist at the university there, was Protestant and his mother Jewish. Hans was their only child.

Displaying an early genius for mathematics, he excelled in school and received a Ph.D. in physics in 1928 at the University of Munich, graduating summa cum laude. He fled Germany after Hitler came to power, going first to England and then to America, arriving at Cornell in 1935.

While helping to found the field of atomic physics, he became fascinated by nature's extremes. In 1938 he penned the equations that explain how the Sun shines and how stars in the prime of life feed their nuclear fires. In 1967 he won a Nobel Prize for the discovery.

From 1943 to 1945 he headed the theoretical division of Los Alamos, the top-secret laboratory in New Mexico where thousands of scientists and technicians, fearful that Hitler might do it first, labored day and night to unlock the atom's power.

Dr. Bethe coaxed some of world's brightest and most idiosyncratic experts to success as they toiled behind rows of barbed wire. Their atomic bomb shook the New Mexican desert on July 16, 1945. The next month the American military dropped similar ones on the Japanese cities of Hiroshima and Nagasaki.

After the war, Dr. Bethe devoted himself not only to nuclear science but to the social dangers posed by that knowledge, in particular to keeping the bomb from ever killing people again.

He advised the Federal Government on matters of weapons and arms limitation, becoming a prime mover behind the first East-West arms accord, the 1963 Limited Test Ban

Treaty, which ended nuclear explosions in the atmosphere and permitted them only beneath the earth.

That stopped the rain of radioactive fallout that had raised the risk of cancer and birth defects among many people. But Dr. Bethe wanted more. He campaigned for a complete cessation to all testing, contrary to Pentagon planners and politicians intent on redoubling the size of the nation's nuclear arsenal.

The development of new types of nuclear arms requires numerous test firings and, as flaws inevitably come to light, design improvements. The absence of explosive testing sharply increases the odds of failure and virtually rules out the possibility of perfecting new designs.

In the 1980's, Dr. Bethe was on the losing side of the political war over nuclear-arms development as the Reagan Administration pressed ahead with dozens of underground explosions. One series aimed at perfecting a new generation of bombs that fired deadly beams.

In the 1990's, he was on the winning side as President Clinton signed, and the United Nations endorsed, the Comprehensive Test Ban Treaty. Its goal is to halt the development of new weapons of mass destruction by imposing a global ban on nuclear detonations.

A remaining trouble, as Dr. Bethe sees it, is that the United States over the decades has become so good at designing nuclear arms that it still might make progress despite the ban. Indeed, the Clinton Administration recently began a \$4-billion-a-year program of bomb maintenance that is endowing the weapons laboratories with all kinds of new tools and test equipment, including a \$2.2 billion laser the size of the Rose Bowl that is to ignite tiny thermonuclear explosions.

Critics fear the custodians might get carried away, begetting new designs and perhaps even new classes of nuclear arms.

So it was that Dr. Bethe wrote President Clinton in April, asking for a pledge of no new weapons.

"The time has come for our nation to declare that it is not working, in any way, to develop further weapons of mass destruction," he wrote.

The United States "needs no more," Dr. Bethe stressed. "Further, it is our own splendid weapons laboratories that are, by far and without question, the most likely to succeed in such nuclear inventions. Since any new types of weapons would, in time, spread to others and present a threat to us, it is logical for us not to pioneer further in this field."

In the interview, Dr. Bethe waxed philosophic about the odds that his personal appeal might engender new Federal policy. "It's a big step for the President to say so, but it's a small step for me," he mused. "Maybe the laboratories will feel that my letter was useful and maybe they'll even follow my advice. I think that's all one can expect."

The issue is important, he added. If the community of nations comes to view the United States as a nuclear hypocrite, whether true or not, that perception could threaten to undermine the new treaty and its ratification around the world. Instead, Dr. Bethe said, the United States must be seen as striving to obey the letter of the law.

Dr. Bethe's face comes alive as the topic turns to his current scientific research: how a single aging star can suddenly explode with the power and brilliance of an entire galaxy of 100 billion stars.

It seems like pure poetry given the light he himself is now shedding in his final years.

"I want to understand just how the mechanism works," Dr. Bethe said, "how you get a

shock wave that propels most of the star outward, propels it at very high speed."

Most days, he said, he spends about four hours studying the nature of the exploding stars, which are known as supernovas. Occasionally, he works up to six hours.

Theoretic physics is a quintessential young man's field, where geniuses often peak at the age of 30, like athletes. Very few make significant contributions at 50. But at 90, Dr. Bethe, a living legend among his peers, is still going strong. "Here's my latest paper," he said with a grin, displaying it proudly on his cluttered desk. "It has been accepted by *The Astrophysical Journal*." The main point, he said, "is that it's easy to get the supernova to expel the outside material," eliminating the problems theorists once encountered.

Dr. Bethe is not interrupting his research to write memoirs. Instead, a biographer is at work. "It's much easier to have a biographer," he remarked, "and he writes much better than I do."

The back of his office door, in an easy-to-view position, held a poster of the Matterhorn. For nearly a half century, a small town at the foot of the great Swiss mountain has been a vacation spot for Dr. Bethe and his wife, Rose Ewald, whom he met in Germany and married in 1939 while the two were newcomers to the United States.

"I couldn't live without her," he said.

His hair askew, his eyes agleam, Dr. Bethe looked a bit like an aged wizard on the verge of disappearing in a puff of smoke. He seemed at ease with his many lives over many decades and appeared to have reconciled his early work on the bomb with his current push to eliminate it. For him, doing the right thing in different periods of history seemed to call for different kinds of actions.

"I am a very happy person," he said with a relaxed smile. "I wouldn't want to change what I did during my life."

FEDERATION OF AMERICAN SCIENTISTS,
Washington, DC, April 25, 1997.

President WILLIAM J. CLINTON,
The White House, Washington, DC.

MY DEAR MR. PRESIDENT: As the Director of the Theoretical Division at Los Alamos, I participated at the most senior level in the World War II Manhattan Project that produced the first atomic weapons. Now, at age 90, I am one of the few remaining senior project participants. And I have followed closely, and participated in, the major issues of the nuclear arms race and disarmament during the last half century. I ask to be permitted to express a related opinion.

It seems that the time has come for our Nation to declare that it is not working, in any way, to develop further weapons of mass destruction of any kind. In particular, this means not financing work looking toward the possibility of new designs for nuclear weapons. And it certainly means not working on new types of nuclear weapons, such as pure-fusion weapons.

The United States already possesses a very wide range of different designs of nuclear weapons and needs no more. Further, it is our own splendid weapons laboratories that are, by far and without any question, the most likely to succeed in such nuclear inventions. Since any new types of weapons would, in time, spread to others and present a threat to us, it is logical for us not to pioneer further in this field.

In some cases, such as pure-fusion weapons, success is unlikely. But even reports of our seeking to invent them could be, from a political point of view, very damaging to our national image and to our effort to maintain a world-wide campaign for nuclear disarmament. Do you, for example, want scientists in laboratories under your Administration trying to invent nuclear weapons so efficient, compared to conventional weapons, that someday, if an unlikely success were

achieved, they would be a new option for terrorists?

This matter is sure to be raised in conjunction with the Senate's review of the Comprehensive Test Ban Treaty, because that Treaty raises the question of what experiments are, and what experiments are not, permitted. In my judgment, the time has come to cease all physical experiments, no matter how small their yield, whose primary purpose is to design new types of nuclear weapons, as opposed to developing peaceful uses of nuclear energy. Indeed, if I were President, I would not fund computational experiments, or even creative thought designed to produce new categories of nuclear weapons. After all, the big secret about the atomic bomb was that it *could* be done. Why should taxpayers pay to learn new such secrets—secrets that will eventually leak—even and especially if we do not plan, ourselves, to implement the secrets?

In effect, the President of the United States, the laboratory directors, and the atomic scientists in the laboratories should all adopt the stance of the "Atomic Scientists' Appeal to Colleagues," which was promulgated two years ago, to "cease and desist from work creating, developing, improving and manufacturing further nuclear weapons—and, for that matter, other weapons of potential mass destruction such as chemical and biological weapons."

I fully support the Science-based Stockpile Stewardship program, which ensures that the existing nuclear weapons remain fully operative. This is a challenging program to fulfill in the absence of nuclear tests. But neither it nor any of the other Comprehensive Test Ban Treaty Safeguards require the laboratories to engage in creative work or physical or computational experiments on the design of new types of nuclear weapons, and they should not do so.

In particular, the basic capability to resume nuclear test activities can and will be maintained, under the Stockpile Stewardship program, without attempting to design new types of nuclear weapons. And even if the Department of Energy is charged to "maintain capability to design, fabricate and certify new warheads"—which I do not believe is necessary—this also would not require or justify research into new types of nuclear weapons.

The underlying purpose of a complete cessation of nuclear testing mandated by the Comprehensive Test Ban Treaty is to prevent new nuclear weapons from emerging and this certainly suggests doing everything we can to prevent new categories of nuclear weapons from being discovered. It is in our national and global interest to stand true to this underlying purpose.

Accordingly, I hope you will review this matter personally to satisfy yourself that no nuclear weapons design work is being done, under the cover of your Safeguards or other policies, that you would not certify as absolutely required. Perhaps, in conjunction with the Comprehensive Nuclear Test Ban Treaty hearings in the Senate, you might consider making a suitable pronouncement along these lines, to discipline the bureaucracy, and to reassure the world that America is vigilant in its desire to ensure that new kinds of nuclear weapons are not created.

Sincerely,

HANS A. BETHE.

THE WHITE HOUSE,

Washington, DC, June 2, 1997.

Prof. HANS BETHE,
Federation of American Scientists, Washington, DC.

DEAR PROFESSOR BETHE: Thank you for sharing your thoughts on nuclear weapons with me, and for the tremendous service you have rendered this nation and the world for well over half a century. Your efforts to de-

velop the atomic bomb during a grave period of national emergency, and your subsequent courageous and principled efforts in support of international agreements to control the awesome destructive power of these weapons, have made our country more secure and the entire world a safer place.

I am fully committed to securing the ratification, entry into force and effective implementation of the Comprehensive Test Ban Treaty (CTBT). By banning all nuclear explosions, the CTBT will constrain the development and qualitative improvement of nuclear weapons and end the development of advanced new types of nuclear weapons. In this way, the Treaty will contribute to the process of nuclear disarmament and the prevention of nuclear proliferation, and it will strengthen international peace and security.

I appreciate your support for the Science-based Stockpile Stewardship Program. The objective of this program is to ensure that our existing nuclear weapons remain safe and reliable in the absence of nuclear testing. As you are aware, my support for the CTBT is conditioned upon such a program, including the conduct of a broad range of effective and continuing experimental programs. I have also directed that the United States maintain the basic capability to resume nuclear test activities prohibited by the CTBT in the unlikely event that the United States should need to withdraw from this treaty. These precautions notwithstanding, I remain confident that the CTBT points us toward a new century in which the roles and risks of nuclear weapons can be further reduced, and ultimately eliminated.

Thank you again for sharing your views with me as we work to lift the nuclear backdrop that has darkened the world's stage for far too long.

Sincerely,

BILL CLINTON.●

MEASURE RETURNED TO THE CALENDAR—S. 903

Mr. HELMS. Mr. President, I ask unanimous consent that S. 903 be placed back on the calendar.

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

AUTHORIZING SENATE LEGAL COUNSEL REPRESENTATION

Mr. HELMS. Mr. President, I ask unanimous consent that the Senate proceed to the immediate consideration of S. Res. 101, submitted earlier today by Senators LOTT and DASCHLE.

The PRESIDING OFFICER. The resolution will be stated by title.

The legislative clerk read as follows:

A resolution (S. Res. 101) to authorize representation of Members, officers, and an employee of the Senate in the case of *Douglas R. Page v. Richard Shelby, et al.*

The PRESIDING OFFICER. Is there objection to the immediate consideration of the resolution?

There being no objection, the Senate proceeded to consider the resolution.

Mr. LOTT. Mr. President, a resident of California has, for the second time in the past several years, filed a lawsuit in the United States District Court for the District of Columbia challenging the constitutionality of