

WASHINGTON REPORTS

Senate Rejects Comprehensive Test Ban Treaty, Evoking Defeat of Versailles Treaty 80 Years Ago

The Senate's rejection of the Comprehensive Test Ban Treaty (CTBT) on 13 October is certain to resonate throughout the world. The vote, 51 to 48 against the treaty, set back an effort that stretches back to President Eisenhower, who sought to control the spread of nuclear weapons by prohibiting all tests and to lock in the US advantage in nuclear technology at the time. The treaty fell 19 votes short of the two-thirds majority necessary for ratification—though four Republicans joined 44 Democrats in approving the treaty.

It was the first time the Senate had defeated a major international accord since the Treaty of Versailles, creating the League of Nations, was voted down in November 1919, at the conclusion of World War I. In March 1920, the Senate had another opportunity to ratify the treaty that President Wilson had put before it, and failed to do so, with far-reaching historic implications. The Senate's defeat of the CTBT was described in a *New York Times* editorial as "a destructive abdication of American leadership on arms control and other international issues."

President Clinton, speaking on the White House lawn, denounced the Senate's vote as a "reckless" and "partisan" action, and said that he would continue to pursue a total ban on nuclear testing. "I assure you, the fight is far from over," he stated. "When all is said and done, the United States will ratify the treaty."

Clinton was the first to sign the CTBT in a ceremony at the United Nations on 24 September 1996. The treaty was to be the cornerstone of worldwide arms control efforts, banning nuclear tests conducted underground. So far the treaty has been signed by 154 nations, including the five major nuclear powers. But only 26 of the 44 nations with nuclear capabilities have ratified it. Only when all 44 act, including the US, of course, can the CTBT take effect. Russia and China have not yet ratified the treaty, and their leaders have indicated that they will follow the lead of the US.

Prior to the vote, both Republicans and Democrats acknowledged that the Senate would reject the treaty.

Clinton and the leaders of Britain, France, and Germany urged the Senate to postpone the vote. They argued that the treaty's demise would not only cause the US a diplomatic humiliation, but would send an ominous message to countries with emerging nuclear weapons programs, such as India, Pakistan, Iran, Iraq, and North Korea.

Opponents of the treaty argue that without the option to test, the safety and reliability of the nuclear stockpile cannot be assured as the weapons age, corrode, and otherwise deteriorate; that the phrase "nuclear weapon test explosion" is not specifically defined in the text; and that small underground tests cannot be reliably detected and verified. Moreover, say opponents, including five former US defense secretaries, no treaty can stop a wanna-be nation from designing and building a simple nuclear weapon with confidence that it will work without a prior test. One of the US bombs dropped on Japan in 1945 was of a design that had not been tested, and South Africa built six nuclear weapons without testing.

Proponents of the CTBT, including the Joint Chiefs of Staff, were aided in their cause by a letter signed by 32 Nobel Prize-winning physicists who called ratification "imperative." The letter, organized by Jerome Friedman of MIT, president of the American Physical Society, declared the treaty "central to future efforts to halt the spread of nuclear weapons." The directors of the three nuclear weapons labs testified before Senate committees that weapons in the stockpile could be monitored and, if necessary, remanufactured by the use of computer simulations, zero-yield tests, and understanding gained through the National Ignition Facility, now under construction at the Lawrence Livermore National Laboratory.

A statement released jointly by the American Geophysical Union and the Seismological Society of America a week before the Senate vote expressed confidence that the worldwide monitoring network the treaty provides for, including 170 seismic stations, would meet the verification requirements. **IRWIN GOODWIN**

Krebs Steps Down as Science Chief of DOE, Breaking Longevity Record

Martha Krebs, the longest-serving director of scientific research at the Department of Energy, informed President Clinton, Energy Secretary Bill Richardson, and her staff on 23 September that she intends to leave the government in early December. Krebs, who was named by Clinton in July 1993 to be director of DOE's Office of Energy Research and was confirmed by the Senate a month later, surpassed Alvin Trivelpiece's record of nearly six years in the job. Trivelpiece left the department in 1987 and now heads Oak Ridge National Laboratory. He telephoned Krebs in August to congratulate her on surpassing his mark. Most research directors at DOE and its predecessor, the Atomic Energy Commission, usually stayed in the post for two or, at most, three years.

In a three-page, single-spaced letter to Clinton, Krebs wrote of her "deep honor" in serving him and a

succession of DOE secretaries—Hazel O'Leary, Federico Peña, and Richardson. Krebs reminded Clinton that DOE's Office of Science (as it was renamed last year) carries out one of the major federal investments in basic research. With an annual budget of about \$3 billion, it supports most of the fundamental science capabilities at the department's national labs and much of the research done at leading universities. She boasted that the office had been the primary source of funding for many Nobel Prizes and the largest federal source for the physical sciences.

"In particular," she noted, "your administration can claim a record of delivering the highest of high technology on schedule, within budget, and with a level of performance that enables American scientists to lead the world in many fields." Krebs went on to express her satisfaction at the completion of the Fermilab Main

Injector and the B-Factor at the Stanford Linear Accelerator Center on time and on budget, and at seeing the Relativistic Heavy Ion Collider in its first runs at Brookhaven National Laboratory. She neglected to mention that the Superconducting Super Collider had been terminated by Congress just as her tenure began in 1993, though in an interview later, she admitted that "it was my greatest challenge and my greatest frustration." Krebs stated in her letter to Clinton that she was proud of expanding DOE's funding for high-energy physics at universities and of "the successful negotiation and ongoing participation in the precedent-setting collaboration to construct the Large Hadron Collider and its detectors at the CERN Laboratory in Switzerland."

When James Sensenbrenner Jr, chairman of the House Science Committee, learned that Krebs had boasted about her part in the CERN negotiations, he guffawed. Sensenbrenner and other conservative members of Congress had erected hurdles that CERN officials were told they had to leap to attain approval of US participation. During the Memorial Day weekend in 1997, Sensenbrenner had flown to Geneva, confronted Chris Llewellyn Smith, CERN's director at the time, and negotiated several concessions that improved the role of US physicists in the management of the LHC and made it clear that the US would not spend more than the predetermined contribution of \$531 million (\$450 million by DOE and \$81 million by the National Science Foundation), even if the project had cost overruns. (See *PHYSICS TODAY*, August 1997, page 43.)

Krebs earned a PhD in theoretical physics from Catholic University in Washington in 1966 and then served as staff director of the House subcommittee on energy development and applications. Before her appointment to the DOE post, she served for ten years as associate director for planning and development at Lawrence Berkeley Laboratory. When she joined LBL in 1983, she became the first woman associate director in the whole DOE lab system. One of her first achievements at Berkeley was to win the support of Congress for the Advanced Light Source.

David Shirley, then director of the Berkeley lab, described her political resourcefulness as "spectacular" when he was asked about Krebs's skills by the newly elected Clinton administration, which was seeking a woman to run DOE's research program. The White House also asked



KREBS: 'Her leadership will be missed'

the late Glenn Seaborg, the longtime AEC chairman, about Krebs's abilities. Seaborg, then professor emeritus at the University of California, Berkeley, and associated with the lab, replied in a letter to Vice President Al Gore that Krebs "has been involved in the development of nearly every initiative that has come to LBL in the last ten years. . . . She understands the changing context in which scientific programs must be developed, with their emphasis on their contribution to society." (See *PHYSICS TODAY*, August 1993, page 41.)

Owed a 'debt of gratitude'

DOE and the country "owe Martha Krebs a debt of gratitude for her stewardship for the past six years of some of the nation's premier scientific research," Richardson said in a statement. After commending her efforts in improving project management, Richardson noted that Krebs's "expertise, energy, vision, professionalism, and her leadership will sorely be missed."

Lab directors also extolled Krebs. William Madia, who heads Pacific Northwest National Laboratory, lauded her for making the Environmental Molecular Science Laboratory a reality at a time when many members of Congress were determined to cut costs and some members to eliminate the department entirely. Krebs was initially skeptical about EMSL's chances, but encouraged Madia to pursue the project as a daunting undertaking for DOE. EMSL, which opened at PNNL in 1997, enables scientists to conduct research involving the relationship of the physical sciences to the environment and human

health (see *PHYSICS TODAY*, April 1997, page 55). John Marburger, director of Brookhaven National Laboratory, was impressed with Krebs's ability to make sure that construction of large user facilities, which serve some 16 000 scientists in the US and other countries, proceeded on the approved budget and schedule. Krebs deserves credit, Marburger observed, for badgering Brookhaven officials to keep to the original milestones for the \$700 million Relativistic Heavy Ion Collider. RHIC, which was dedicated on 4 October, is designed to study the transition to a quark-gluon plasma. (See *PHYSICS TODAY*, page 20.)

Trivelpiece praised Krebs for making scientific collaborations "a cornerstone of her leadership." In fact, he said, "getting the labs together on scientific projects and improving the working conditions at the labs, which includes putting our funding on a high priority in the department and then in Congress, have been two of her biggest accomplishments." Her backing "was decisive," he added, for the most advanced x-ray sources at Berkeley and Argonne National Laboratory and on accelerator upgrades at Fermilab, Stanford, and Brookhaven. Such facilities have elevated US research in the developing field of structural biology, he said.

Trivelpiece and other lab directors also point to Krebs's efforts to accelerate DOE's human genome program. Krebs's legacy includes the Human Genome Laboratory at the Berkeley lab and the Joint Genome Institute, a collaboration of the Berkeley, Livermore, and Los Alamos labs, which operate the place on a consolidated budget. The institute is now the second largest producer of gene sequence in the US and third in the world.

Krebs also had a hand in the development of the \$1.3 billion Spallation Neutron Source at Oak Ridge. SNS, designed to be the world's largest facility of its kind, is the successor to the Advanced Neutron Source, which failed to get Congress's support because of its multibillion dollar price tag. Krebs insisted that SNS would prosper politically and scientifically as a collaboration. Oak Ridge scientists and engineers are now working with their colleagues at Argonne, Brookhaven, Lawrence Berkeley, and Los Alamos in the design and construction of SNS. "Her support for SNS is without parallel," Trivelpiece said.

Krebs has been exploring several options for the next stage of her career—most likely at an academic institution, but possibly at some com-

mercial organization. Meanwhile, sources at DOE say James Decker, deputy director of the Office of Science, will fill in for Krebs on an acting basis, a role he played for

months when Trivelpiece departed, and which he is most likely to have again in the remaining year of the Clinton administration.

IRWIN GOODWIN

Brown Eulogized as 'Mr. Science,' Even as Widow Loses Bid for Seat

Among the tributes to the late Congressman George E. Brown Jr (see PHYSICS TODAY, September, page 48), at a two-hour memorial, "Remembering Mr. Science," held in the auditorium of the American Association for the Advancement of Science on 27 September, was the reading of a little-known letter that certified his deft wit. The letter had been written by Brown to the *Ontario Daily Report*, a small newspaper in his California district, after the paper had published, on 20 September 1985, a scathing editorial headed "No Defending Brown's Stand on Defense." Brown decided to defend himself against the attack and refused any help from his staff in doing so. "The letter was George at his most derisive," said a former staffer. "For all his amiability and urbanity, George had another side best revealed in that letter."

Brown began his letter by thanking the newspaper for the editorial. Then he wrote:

My first reason for expressing thanks is set forth in your first paragraph. You acknowledge that this is your first editorial about me in several months. Thanks for your restraint. My second reason . . . is your acknowledgement that I have been very active in exposing some of the president's military policies, particularly "Star Wars."

You even acknowledge that I have become somewhat of a leader in this area. To quote you, ' . . . not since his Vietnam protest years has he been so prominent as the leader of his own band.'

I suppose it would be too much to expect you to mention that 'his own band' now includes a majority of the House of Representatives, to say nothing of a large majority of the National Academy of Sciences and the scientific community in general.

You do raise a couple of points that might wound someone more sensitive than myself. You seem to hint, nay, almost assert, that I am not a dynamic, charismatic, and influential congressman, despite my national

role in opposing the president. But in a spirit of true humility, I want to thank you for the reminder of my fallibility, and I will try in the future to become more dynamic, charismatic, and influential in opposing policies I consider detrimental to the future existence of society.

The last point you make that I wish to respond to (you make several that I have refuted many times in the past, but you continue to insist on printing them) is your worry that people around the country may think that I represent 'the most left-leaning district in America.' Let me assure you that I always try to give my audiences a true picture of the political nature of my district. . . . I generally describe it as moderate to conservative, with large numbers of military, military retirees, and dependents, conservative Democrats, many of southern background, and increasing numbers of conservative Yuppies.

I admit that many of my constituents don't agree with me on everything that I do, but most are willing to listen to me. I generally add that there are some rightwing kooks in my district and some extremely conservative editors (I generally mention your newspaper in this connection).

However, even conservative editors have their use. I reprint

a lot of their material, send it to my liberal mailing list, and beg for more money to defend myself against the kind of garbage which they write. It almost always works.

So thanks again for making me the object of your attention.

Sincerely, George E. Brown Jr,
Member of Congress

Most politicians refrain from heckling, especially in print. But Brown wasn't like most politicians. Though he was the longest-serving member of Congress from California, in his 18th term at the time of his death, he had usually squeaked by in elections. His last election in 1998 was different. Brown's margin of victory was 15% over his Republican opponent, and almost all political pundits figured he could win again in 2000.

So, while still mourning the death of her husband, Marta Macias Brown followed the example of more than three dozen political widows by seeking election to his seat in Congress. In the past, virtually all congressional widows who ran for a husband's office have won. In recent years in California, Mary Bono and Lois Capps each replaced their late husbands in easy elections. Marta Brown, however, had a harder time. She was unable to win the endorsement of the state Democratic Party in the open primary on 21 September or to get the backing of labor unions in the gritty blue-collar heartland of the so-called Inland Empire, which runs from Ontario east to San Bernardino. The primary attracted ten candidates, including five Democrats—notably, Joe Baca, a state senator who had served three terms. With little time to campaign between George's death and the election, the candidate's party connections appeared to be a deciding factor at the polls. In the end, Baca won and Marta Brown ran second, 518 votes behind.

IRWIN GOODWIN

Washington Ins and Outs

Meserve Joins NRC; New Faces at State Department and NSF

On 1 October, a day after the latest nuclear accident at the Tokaimura uranium reprocessing plant in Japan, the US Senate unanimously confirmed President Clinton's nomination of **Richard A. Meserve** to be chairman of the Nuclear Regulatory Commission (NRC). The president had named Meserve for the position on 6 August, and the Senate Committee on Environment and Public Works had

held a hearing on the nomination on 23 September and reported its unanimous endorsement of the nominee to the full Senate only six days later. The speed of the Senate's action suggested to some that the Tokaimura incident had nuclear regulatory repercussions in Washington.

Meserve, a partner at the prestigious Washington law firm of Covington & Burling, has an impressive