in Soviet attitudes toward the need to share additional verification data on nuclear testing it appears to be encouraging.

While the agreement between the NRDC and the USSR Academy of Sciences has no official US government status, we are interested in learning more about the discussions. Obviously issues with such strong national security implications as nuclear testing ultimately must be discussed in a government-to-government context.

The Soviet position, as we understand it was conveyed to the NRDC, provides for the participation of Soviet government scientists in improved in-country monitoring of underground nuclear explosions. We therefore see no reason why the Soviet Union should not agree to the President's standing offer to have a meeting of US and Soviet government scientists and experts on improving TTBT and PNET verification with on-site monitoring with the CORRTEX technique [a method of estimating yield by means of a coaxial cable placed in or near the test hole, with an accuracy of $\pm 30\%$].

Because effective verification is a matter that can only be resolved at the government-to-government level, one would expect the Soviets—if indeed they are serious regarding verification improvements—to accept the standing US invitation for a meeting of US and Soviet government experts to discuss verification improvements for the TTBT and PNET.

Reacting to the State Department's directive, NRDC Chairman Dewind says: "NRDC is not involved and would not want to be involved in the discussion of official US–Soviet relations. And that, I think, is one of the merits of what we are doing here. This is purely a scientific exchange of basic data, and what it will demonstrate is that the Soviet Union and the United States will not make in-country verification any sort of obstacle to a test ban. That's our objective here. Much of the State Department directive relates to other policy relationships and negotiations—that's not our bag."

Regarding the alleged asymmetry between NRDC-sponsored and Academy scientists, NRDC officers point out that US government scientists are welcome to participate and that the Academy is one of the more independent Soviet institutions. The Academy's Institute of Earth Physics, the participating unit, is thought to be primarily research oriented and according to a CIA guide is a "leading center for the study of earthquakes and other seismic phenomena."

**Test-ban negotiations.** In theory at least, it was official US policy from 1963 to 1981 that a verifiable comprehensive test-ban treaty was an immediate objective. The partial test-ban treaty and the nonproliferation treaty, both ratified by the US, contain clauses committing the parties to the pursuit of a complete test ban.

Until the end of 1977, it was the Soviet position that any test-ban treaty had to make allowance for so-called peaceful nuclear explosives, which the Soviets hoped to use in civil-engineering projects. The Threshold Test Ban Treaty of 1974 and the Peaceful Nuclear Explosives Treaty of 1976 therefore allowed nuclear explosives of under 150 kilotons per explosive.

Both the House and Senate have passed resolutions requesting that the two treaties be submitted for ratification, but neither has been submitted. Hawks disliked the treaties because they were seen as an opening wedge for a comprehensive ban, and doves disliked them because they fell short of a total ban and provided legitimation for the idea of peaceful nuclear explosives, an idea that India exploited in 1974 to justify a nuclear-weapon test.

On 2 November 1977, in a landmark speech to the Supreme Soviet, Soviet leader Leonid Brezhnev called for a full moratorium on nuclear explosions. Cyrus R. Vance, US Secretary of State at the time, hailed Brezhnev's offer as "a major step." Vance said the Soviet decision to forgo "so-called peaceful nuclear explosions is in the direction of what we have been talking about for several months."

The two superpowers opened negotiations on a comprehensive test ban, and President Jimmy Carter officially endorsed the idea of a five-year ban. Under pressure from the Pentagon and the nuclear-weapons laboratories, represented in the Carter Administration by Energy Secretary James Schlesinger, the President backed off from a five-year ban in August 1978 and instead gave his blessing to the idea of a three-year ban.

At that point, confronted with a US demand that they accept placement of ten national seismic stations in each signatory country, the Soviets raised the question of why they should accept so much surveillance for such a short treaty. Nonetheless they agreed in principle to ten stations in early 1979, on condition that the United Kingdom accept ten as well, despite its size.

By that time it had become apparent that Carter was not going to win ratification of the newly negotiated SALT II treaty without a big Senate fight, and so the President put the CTB on the back burner. Test-ban talks were suspended in November 1980, and President Reagan, upon taking office, decided not to resume with them. The Reagan Administration proceeded to shift attention back to TTBT and PNET, raising questions about their verifiability (PHYSICS TODAY, November 1983, page 70).

**The intent** behind the NRDC agreement with the Soviet Academy plainly is to focus national attention back on the possibility of a comprehensive test ban. "The NRDC proposal is a sort of pilot program to demonstrate that you can put in place in-country monitoring for a comprehensive test-ban treaty," Cochran says.

NRDC has submitted a request to the Commerce Department for transfer of US seismic equipment to the Soviet Union. Commerce routinely handles such requests and presumably will solicit the views of interested departments including State and Defense. The Office of Political and Military Affairs at State expects the matter to receive extensive review, as any such request would. —WILLIAM SWEET

## SPS elects Miner as Sigma Pi Sigma president

The Society of Physics Students has elected George K. Miner to a two-year term as president of Sigma Pi Sigma, the physics honor society. Miner is a physics professor at the University of Dayton in Dayton, Ohio. He received a BA from Thomas More College in 1958, an MS from Notre Dame in 1960 and a PhD from the University of Cincinnati in 1965. He was chairman of the physics department at Thomas More College from 1966 to 1976, when he moved to the University of Dayton. Miner established the Sigma Pi Sigma chapter at Thomas More and served as chapter adviser both there and at Dayton. Both chapters have been honored many times with SPS awards.

In other election results, William S. Bickel (University of Arizona) was elected to serve a second three-year term as Councillor for Zone 11. Newly elected to serve three-year terms as Councillors are Julia A. Thompson (University of Pittsburgh) for Zone 3, Raymond L. Kozub (Tennessee Technological University) for Zone 5 and Constantine E. Theodosiou (University of Toledo) for Zone 7.

## in brief

Tania M. Slawecki, a junior majoring in physics at Lycoming College in Williamsport, Pennsylvania, is this year's recipient of the Society of Physics Students scholarship. She is the second recipient of the $1000 scholarship. □