

parties stated that they would observe the agreed upon limitation during the pre-ratification period. Despite its continuing unratified status, the TTBT has to some extent constrained the development of new high-yield warheads. The yield limitation has also made it difficult for the parties to carry out certain stockpile-sampling, because the existing large thermonuclear weapons cannot be tested at their full yield. (Most strategic nuclear warheads in the super-powers' arsenals have yields in excess of 150 kt.) Moreover, cessation of explosions in the megaton range has had a positive environmental effect: it has further reduced the risks of radioactive venting and of ground disturbance. All this does not alter the fact that the TTBT has hardly contributed to the cessation of the nuclear arms race. The 150-kt yield threshold is too high to be really meaningful: the parties do not experience onerous restraints in continuing their nuclear weapon programmes. Nor does the agreed threshold reflect present verification capabilities: the detection and identification of nuclear explosions of far lower size are possible.

The TTBT was seen by many as a substitute for, rather than a step towards, a comprehensive treaty. It was criticized in both the Conference on Disarmament and the United Nations as inadequate. Unlike the PTBT and other nuclear arms control agreements, it was not welcomed by the UN General Assembly; nor has any international appeal been made for its ratification.

### **THE 1976 PEACEFUL NUCLEAR EXPLOSIONS**

The provisions of the TTBT did not extend to underground nuclear explosions for peaceful purposes. Since such explosions cannot be distinguished, at least from a distance, from explosions serving military ends, the possibility remained that the threshold limitation on weapon tests might be circumvented. The United States and the Soviet Union decided, therefore, to work out a separate agreement, which would contain additional obligations closing this loophole. A treaty on underground nuclear explosions for peaceful purposes, called the Peaceful Nuclear Explosions Treaty (PNET), was signed on 28 May 1976. It regulates the explosions carried out