The Trend Towards Smaller Nuclear Weapons

The importance of effectively monitoring tests of small-yield devices must be viewed in relation to three important recent developments in advanced weapons technology:

- The increasing accuracy achieved by nuclear missiles, which has reached a point where much smaller yields are thought capable of ensuring destruction of specific targets;
- The increasing attractiveness of very small nuclear weapons (equivalent to a few tons of chemical explosive) to those who would like to use nuclear weapons in a purely tactical battlefield situation, with minimal risk to civilians in the area and minimal environmental involvement; and
- The continuing search for smaller, more effective and more economic nuclear trigger mechanisms.

Although the military significance of these very small nuclear tests is a matter of continuing debate, most experts seem to agree that it would be relatively easy for any nation to test smaller weapons without fear of detection. It would be even easier to do so in those countries where information flow and movement are strictly controlled and where there are large, sparsely inhabited areas.

One Solution: Unmanned Stations for "Close-in" Data Gathering

The discussion and experiments that have been conducted each year since 1976 by the Group of Scientific Experts have always been based on the use of data generally available through the international seismic network. Discussions between the UK, the USA and the USSR during the period 1976–1980 indicated a willingness on the part of those countries to permit the placement of some unmanned devices, sometimes known as "black boxes", within their territories. Once the US and the USSR agreed in principle to the establishment of unmanned stations within each other's borders, American scientists started designing a prototype unmanned station that would be able to continuously transmit data back to the USA by satellite.