in designated facilities under observation by international experts consistent with national security. Verifying the actual dismantlement and "destruction" of all of the tactical nuclear weapons which belonged to the former Soviet Union will be very difficult if not impossible. However, the totality of information being provided by CIS and Republic officials and acquired through OSI by U.S. experts, combined with data from NTM and NIM, should provide high confidence in the eventual destruction of the preponderance of these weapons.

Determining the synergistic effects between the various monitoring techniques associated with the elimination of the delivery systems of tactical/theater nuclear weapons and the nuclear warheads per se must await a decision on whether there will be a formal agreement on verifying these reductions and the specifics of the resulting verification regime. If NTM and NIM were combined with cooperative measures such as the development of specific timetables and procedures, the requirement of data exchanges and notifications, and the use of simple verification technologies to aid on-site inspections, clearly there would be significant synergistic effects.

Verification of the nuclear testing treaties TTBT and PNET is supported by the right to use in-country sensing of seismic disturbances caused by either earthquakes or nuclear explosions and on-site hydrodynamic sensors placed in emplacement holes at the U.S. and Russian nuclear test sites. Determining the yield of "non-standard" tests — those tests generally used for evaluation of weapons effects and the operation of military systems in a nuclear environment — is complex, and the protocol provides for the use of additional hydrodynamic measurement devices such as the U.S. method, HYDROPLUS. This technology uses the measurements of the peak stress, peak particle velocity, and ground shock velocity at ranges beyond the range of the "standard test" yield methodology, CORRTEX. The synergies associated with using the suite of HYDROPLUS data with new data processing techniques produces more accurate determinations of the yield and the degree and limit of any uncertainties. Knowledge gained by the use of this new method will contribute to future bilateral and multilateral agreements in which the testing thresholds for TTBT/PNET are reduced, testing is limited to safety purposes, and a CTB is negotiated. Sharing this knowledge will be beneficial for verifying multilateral agreements.

What lessons have been learned from the UNSCOM experiences in Iraq which might apply to future regional verification regimes constraining proliferation? These are a few:

- Some countries may be prepared to cheat on their international non-proliferation obligations; stronger verification measures are needed to deter, detect, and provide a basis for penalizing those involved in such activities. Those measures should be analyzed in terms of their effectiveness individually and their synergistic effects in total.
- The traditional emphasis of safeguards on the detection of the availability or diversion of a significant quantity of nuclear materials is not sufficient. Exchanges of open-source information and, in some cases, national intelligence could provide information on suspect sites in the areas of imports of nuclear and dual-use items and fuel cycle activities. This information could then be used to target aerial surveillance of suspected sites or activities.
- Regional zones should be promoted in which reprocessing plants, enrichment plants, and the use of weapons-grade materials would be banned. Such zones would need to be supported by verification methods including NIM and aerial surveillance.
- Non-nuclear weapon states should sign no-transfer, no assistance pledges similar to those required of NWS parties by Article I of the NPT. These pledges should be backed up by effective means of verification.