Proposal Abstract K6(G67)

 Arms Control Problem: Nuclear weapons - comprehensive test ban

2. Verification Type:

(a) Seismic sensors - extra-border stations

- international network
- (b) International exchange of information
- (c) On-site inspection selective

3. Source:

Sweden. "Memorandum on the control of an underground test ban treaty". ENDC/191, 19 July 1967.

4. Summary:

The paper describes an analysis of the utility of a number of techniques for verifying a CTB. The analysis involved an application of "decision theory". It was assumed, as a starting point in this analysis, that a basic control system would have to meet two political requirements:

- (1) It should provide adequate deterrence against violations by making the probability of discovery sufficiently high; a discovery probability of 10 percent being rated as sufficiently high.
- (2) It should provide adequate assurance against the risk that a false alarm would induce unwarranted accusations.

The results of the analysis showed that some of the seismic identification methods suggested in the open literature are of limited efficiency. However, the British teleseismic method of "identification by complexity" suggests the possibility of a control system incorporating no more than one on-site inspection in two years. A similar number of inspections would be required using a US identification method employing regional data perhaps obtained through an international data exchange. If these two seismic methods were combined the number of inspections required might be further reduced.

Given such improved seismic identification methods it is possible to talk of control without inspection.