

K11(G71)

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Proposal Abstract K11(G71)

1. **Arms Control Problem:**
Nuclear weapons - comprehensive test ban
2. **Verification Type:**
Seismic sensors - extra-border stations
3. **Source:**
Canada. "Working paper on the seismological detection and identification of underground nuclear explosions". CCD/327 and Add. 1, 29 June 1971.
4. **Summary:**
The paper comes to the following conclusions, amongst others:
 - (1) The identification threshold of Eurasian underground explosions using existing network is 20 kt except in dry alluvium, where the threshold rises.
 - (2) The identification threshold of North American explosions is 10-20 kt but with new techniques this could be reduced to 5-10 kt except for dry alluvium.
 - (3) A corresponding reduction in the identification threshold for Eurasia requires deployment of a limited number of improved single stations, together with a merging of currently available data.
 - (4) Reduction of the threshold to 1-2 kt except of dry alluvium would require massive investment in arrays situated on the same continent as the events, plus improved analytical techniques.
 - (5) Concentrating on existing test sites simplifies the identification problem. Estimates for universal coverage are always more pessimistic than capabilities for specific test sites.
 - (6) The practical potential of 5-10 kt threshold is possible because of modern standard seismograph networks, deployment of arrays by a number of countries, the work of a number of countries on experimental improved single stations, and the ready or potential availability of data from all these.
5. **Selected Comments of States:**
The paper was interpreted by the United Kingdom (CD/486, 12 April 1976) as suggesting that rather than establish a special network for test ban monitoring, it would be better merely to improve the existing World-Wide Standardized Seismic Network.