

COMMITTEE ON DISARMAMENT

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LETTER DATED 15 JULY 1981 ADDRESSED TO THE CHAIRMAN OF THE COMMITTEE ON DISARMAMENT FROM THE MINISTER COUNSELLOR OF THE PERMANENT MISSION OF FINLAND TRANSMITTING A DOCUMENT ENTITLED "TRACE ANALYSIS OF CHEMICAL WARFARE AGENTS" 1/

I have the honour to transmit to you a document entitled "Trace Analysis of Chemical Warfare Agents". This study was presented at a Chemical Weapons Workshop held in Helsinki on 2-4 July 1981.

The workshop was arranged in order to demonstrate the Finnish project for CW verification.

Thirty diplomats and experts from 16 countries and United Nations Secretariat participated in the workshop which gave a possibility for exchange of views on various aspects of the role and requirements of laboratory analysis in verification of chemical disarmament. Discussions with experts indicated wide agreement on the suitability and efficiency of the presented analytical methodology and instrumentation for CW verification analysis. Adaptation of analytical systems for practical use and extension of the methodology and data base also for non-phosphorus warfare agents was considered as important future work in many comments. Capability to analyse biological samples for verification of alleged exposure to CW agents was also considered necessary.

Demonstration of the developed analytical systems, laboratories and selected instrumental facilities were performed in two stages in relation to the proposed approach to the potential verification tasks: as a research or central laboratory verification procedure and as a mobile laboratory verification procedure. The former procedure is capable of detecting and identifying any toxic chemical agent and its degradation product, and the latter is used for on-site monitoring of known chemical agents. Because of simplicity and clarity, all research teams demonstrated Sarin and Soman monitoring as model experiments. These agents are also the model compounds of the fourth Blue Book published just before the workshop. The research laboratory procedure proposed as a basis for standardization consists of sampling and sample concentration, enzymatic toxicity test for nerve agents, phosphorus and fluorine compound analysis, and finally ultrasensitive trace organic analysis. If no nerve agents or related compounds are found in the sample standard organic chemical structure, analysis will be carried out for the suspected toxic compound. Despite the fact that the procedure demonstrated was designed for organophosphorous warfare agents it is after certain modifications also applicable for any important chemical warfare agents. This work is part of the next phase of our project.

1/ A limited distribution of this document in English has been made to the members of the CD. Additional copies are available from the Ministry for Foreign Affairs in Helsinki.