

35. In this situation, on 2 July 1979, the decision had to be taken to stop burning the last 2,710 litres remaining in the fourth tank. This amount was strongly acidic and contained about 20 per cent ferric chloride. The disposal of these 2,710 litres of mustard was eventually carried out by the Indonesian team using the method of hydrolysis. For safety purposes, the bunker was sealed off completely and the only way for the air to escape from the bunker was through a hardened plastic tube which penetrated into the bunker and which was erected vertically to a height of 3 metres from the surface of the bunker's cover. The mustard agent was destroyed by hydrolysis through addition of small quantities of sodium hydroxide solution and by mixing the contents of the storage tank, using the pump unit and some improvised heating. The addition of sodium hydroxide had to be stopped when detection made at a distance of 5 metres from the edge of the hardened plastic tube showed a positive reaction (heat produced during the hydrolysis enhanced the evaporation of the mustard). The addition of sodium hydroxide was continued when the detection proved to be negative. The work was completed in one and a half months during which chemical and toxicological analysis of the samples taken at regular intervals indicated that hydrolysis was complete.

36. After the pumping, a few tens of litres of mustard remained in the storage tanks. These were decontaminated by the addition of about 200 kilogrammes of standard tropical bleach as a slurry in water. Mixing was done with air from the air compressor and the air escaping from the tank was analysed from mustard vapour with the available means for mustard vapour detection. It took about three days before the mustard detection reaction became negative. The tanks were then filled with water completely. Later on the shelters were filled with soil. The decontamination of the transport tanks was carried out in a similar way using standard tropical bleach. The decontamination of the mustard circuit at the incinerator was done by first passing oil through this circuit into the incinerator for some time and later on possibly remaining mustard was destroyed by fire after taking it apart.

VI. CONCLUDING REMARKS

37. The described project (named OBONG, meaning "to burn" in Sundanese language) has demonstrated that for quantities of mustard and under the conditions as indicated, the destruction of the mustard can be safely carried out in a reasonable period of time, using the controlled incineration concept and the relatively simple equipment as described.

38. The technical difficulties encountered could have been avoided if the possible occurrence of acidic and polymeric products in stocks of mustard of about 40 years old had been taken into account. The existence of inorganic compounds and polymer products in the liquid had caused difficulties in its incineration. However, when a very good quality of detection equipment and analytical-chemical facilities are available, the elimination of limited quantities of such liquid can be carried out successfully by a simple method of hydrolysis.

39. The experience gained during this operation confirmed that on-site inspection during the destruction is the only effective means of verification of actual destruction.

40. The fact that the destruction was carried out before the conclusion of the Chemical Weapons Convention has also demonstrated the sincere will of the two countries effectively to promote the cause of disarmament.