

thoroughly discussed was the destruction of BZ in the USA, an agent of lesser risk than nerve agents or mustard gas. Still, the overall operation from planning to completion including decontamination of the destruction plant itself took 14 years, for just about 700 agent tons. While, based on experience available today, several parts of chemical weapons destruction programs could in future be compressed, some cannot : time requirements for systemizing the plant and its equipment after construction will need, in a similar plant set-up, about 2 years. Training of personnel would also require about 6 months (but could be combined with the systemizing phase). While the operational phase could be shortened slightly by increasing plant availability, it has to be stressed that in the BZ destruction program a utilization coefficient of 68 per cent had already been achieved. Similar experiences are available from the JACADS operational tests, and other such operations.

As far as costs are concerned, the BZ destruction program was again used as an example. Its overall cost was said to have been around US-\$ 163 million out of which the plant construction accounted for only 9 million, the equipment and its installation for 31 million, and 52 million were spent on operational costs.

The destruction of former CW production plants is an even more complex task, as for example the dismantling of the pilot nerve agent plant in Nancekuke, UK, has shown. Long-term contamination of parts of such plants will have to be anticipated even after thorough and multiple decontamination. It was also pointed out that under current legislation for example in the USA, conversion of parts of such a plant (as well as plants used for destroying chemical weapons) is not a viable option given the requirement to thoroughly decontaminate all such equipment at the end of the operation. This is most effectively done by thermal treatment which in turn renders the treated equipment unusable.

II - EXPERIENCES FROM ONGOING DESTRUCTION PROGRAMS

In Canada, a transportable incineration system is being used to destroy test nerve agents on the order of several hundreds of kilograms (4). Additionally, ten of tons of mustard gas and hydrolysate solution from previous decontamination operations, and considerably more left-over barrels, shells and the like had to be treated. The plant's design capacity though not fully achieved in reality was around 1.8 agent tons per hour. Given its transportability, the plant has been offered for future use outside Canada. The plant is operated by a total staff of 12 including lab support, air monitoring staff and administration.

Beside the technical lessons learned, a major conclusion of that operation was that public involvement is paramount. Not only are information and education of the public necessary to ascertain public acceptance, but the involvement of a voluntary citizen committee contributed to the high standard of the final destruction operation significantly.