

Ad Hoc Committee on Chemical Weapons

UNITED STATES OF AMERICA

U.S. Chemical Weapons (CW) Destruction Safety and Environmental Requirements

(Presented at the meeting of the Technical Experts on CW Destruction, Geneva, 7-11 October 1991)

1. Introduction

It is the policy of the U.S. Government that chemical demilitarization conducted on its territory be conducted in such a manner as to maximize public and worker safety and environmental protection. Chemical demilitarization must comply with all existing environmental and safety regulation/standards. In addition to the "normal" regulatory requirements, chemical demilitarization must also comply with internal requirements, as well as requirements established by independent oversight organizations (e.g. Department of Health and Human Services (DHHS) and National Academy of Sciences (NAS)).

2. Design Criteria

U.S. chemical demilitarization facilities must satisfy the following general design criteria:

a. No uncontrolled emissions. Cascade ventilation is used throughout the entire facility to insure vapor containment. Total containment is used in those areas where energetic components could result in accidental detonation.

(1) Total containment contains the blast, fragments, over pressure and chemical agent resulting from an accidental detonation of a chemical munition. The design is based on the peak design processing rates. For the U.S. disposal facility, the blast design for the Explosive Containment Room (ECR) and deactivation barrier room are 15 and 28.2 pounds, trinitrotoluene (TNT) equivalent, respectively. In addition, the ECR is designed for a fragment loading of the M23 land mine. All access is via blast-retaining doors, gates or panels. Doors and gates are interlocked with process controls.

(2) Vapor containment is achieved by the cascade ventilation system which draws air from the areas of least