

incineration experience at that time and therefore adopted chemical neutralization for use during Project Eagle Phase II, based upon laboratory and pilot plant studies as well as on limited, but successful application during field disposal operations. Incineration was used to destroy the chemical agents during the CAIS Disposal Program because it minimized handling, could safely destroy all the chemical agents and packing material, and generated relatively small quantities of a more environmentally acceptable waste than did chemical neutralization.

3. Project Eagle Phase I

The disposal process consisted of four primary steps: (1) ton container preheating and draining; (2) agent incineration and ton container thermal decontamination; (3) incinerator emission control; and (4) waste treatment and disposal. The ton containers were placed in a heated thaw room to ensure the agent was heated well above its melting point. The agent was vacuum drained through the 2.54 cm inside diameter eduction tubes which were connected to the valves on the ton containers. The residual heel in the ton containers averaged 45 kilo-grams for HD-filled ton containers and 272 kilograms for H-filled ton containers. The drained mustard was incinerated in a horizontal liquid incinerator that had formerly been used to incinerate hydrazine. The incinerator operated at approximately 1,300°C; it did not have a separately fired afterburner but used the long residence time provided by a brick lined manifold between the combustion chamber and the Pollution Abatement System (PAS) to ensure complete destruction of the mustard. The drained ton containers were thermally decontaminated in one of two pedestal hearth furnaces operated at approximately 490°C. Two holes were punched in each ton container before it was placed in the furnace; an air sparge was inserted in each punch hole to facilitate residue incineration. Each furnace averaged seven ton containers per day. The incinerators used a common PAS consisting of two parallel caustic quench and packed bed scrubber towers, a single five-stage electrostatic precipitator (ESP) (to remove the iron oxide), an induced draft fan and a stack. All liquids generated by the destruction process were dried to a salt, using a spray dryer scrubber. A total of 6,480 metric tonnes of salt, ash and electrostatic precipitator residue were packaged in drums and placed in an approved landfill. The decontaminated ton containers were sold as scrap.

4. Project Eagle Phase II (Expanded)

a. The destruction of the M34 cluster bombs was the original objective of Phase II. The project was "expanded" in 1973 to include bulk GB contained in five underground storage tanks, GE-filled ton containers, and Honest John rocket warheads containing M139 bombs.