

Army Alternative Technology and Approaches program (1985)

Separately from the ACWA program, the Alternative Technology and Approaches program (ATAP) under the U.S. Army's Chemical Materials Agency was tasked to investigate alternatives to incineration for the disposal of the chemical agent stockpiles at Aberdeen Proving Grounds, Maryland and Newport Chemical Depot, Indiana. Neutralization followed by biotreatment was selected as the remedial technology for both sites.

The attached reports in this e-mail and subsequent e-mails contain relevant information about the laboratory, bench, and pilot scale testing at both tests and are summarized below:

There are three fact sheets:

- **Aberdeen: Making Chemical Weapons History**
- **Newport: Making Chemical Weapons History**
- **Neutralization of Chemical Agents**

The fact sheets give a general background of the sites and the neutralization (hydrolysis) process.

There are three testing reports:

- The **Test Report for Laboratory- and Bench-Scale Biodegradation of Neutralized HD Mustard Agent** presents testing data in Section 3, but gives no summary or conclusions in this report.
- The **Plan for Supercritical Water Oxidation for VX, NaOH Hydrolysate** includes a very good overview of SCWO testing prior to 1998 in a database.
- The **Pilot Testing of Neutralization/Supercritical Water Oxidation of VX Agent at Newport Chemical Depot, Indiana** contained no testing data but includes useful information such as: environmental impacts, mitigation measures, and monitoring. Appendix A of this report houses an evaluation of all the chemical demilitarization of alternative technologies that were reviewed.

There are five technology evaluation reports:

- **Alternative Technology Program Core Evaluation Team Report** presents a comprehensive overview and comparison of incineration, neutralization/biotreatment, neutralization/shipment, M4 catalytic extraction process, AEA electrochemical oxidation process, and eco-logic gas phase reduction process. Criteria used in the evaluations include process efficacy, environmental impact, process safety, cost, and schedule.
- **Technology Evaluation for Chemical Demilitarization** – provides a tabular summary of the preliminary assessments for various remedial technologies.
- **Transpiring Wall-Supercritical Water Oxidation Technology Assessment**,

- **Wet Air Oxidation Technology Assessment, and**
- **Assessment of Plasma Arc Technology for Processing of Chemical Demilitarization Wastes.**

The last three reports supply information such as: summary of prior evaluations, technology update, and technical and economic evaluations

There are two reports on the neutralization process:

- **NECDF Hydrolysate Disposal** – a power point presentation briefing for the national research council.
- **Laboratory Test Report for Chemical Neutralization of Mustard Agent** reports the results of chemical neutralization at Aberdeen Proving Grounds, Maryland.