

CBW: Army Chemical Stock Destruction May Cost \$1 Billion

The U.S. Army has been having a rough time determining whether and how to destroy its stocks of nerve gas and other chemical weapons ever since 1969, when the National Academy of Sciences (NAS) effectively quashed a comprehensive plan for dumping them in the ocean. In the interim, the Army has held on to its huge stockpiles—estimated to be capable of killing the world's population several times over—which are located at military installations in eight states, on Johnston Island in the Pacific, and in West Germany. Now, however, official Army Chemical Corps projections show that it will take until 1985 to destroy the whole stockpile, and it will cost a whopping \$1 billion—or several times what the weapons cost to manufacture. The Army attributes the need for this elaborate disposal plan, and its cost, to the 1969 NAS report:

The \$1 billion figure, which has appeared in published reports and has been confirmed by Army spokesmen, is said to be only an estimate. Nonetheless, one non-Army expert said that

it is probably a "conservative" underestimate in terms of Army planning.

According to Army sources, three quarters of the \$1 billion would go to development, construction, and operation of a movable chemical destruction factory called CAMDS (Army lingo for Chemical Agent Munition Disposal System). CAMDS is principally a response to the NAS recommendation in 1969 that, instead of hazardous transport, shipping, and ocean sinking of the chemicals, the Army should dispose of most of its surplus chemical weapons at their storage locations. CAMDS, therefore, brings the mountain to Mohammed. Instead of transporting chemicals to a single plant for destruction, CAMDS will be operated at one military installation, and then be detoxified, disassembled, loaded on rail flatcars, and shipped to another base for reuse. Army spokesmen say that the 12-year lead time to complete the program is necessary because the chemicals must be processed slowly in order to minimize environmental and safety hazards. Completion of CAMDS is

roughly 5 years down the line, they say.

The remaining \$250 million apparently includes the completed destruction of biological weapons stocks, the ongoing destruction of stocks at the Rocky Mountain Arsenal, and, according to a spokesman, "other" operations not covered by CAMDS.

George B. Kistiakowsky, vice president of NAS, who headed the 1969 committee on chemical weapons disposal, reacted to news of the Army's billion-dollar estimate by saying it sounded far too high. The NAS group, he said, only studied disposal of surplus chemical weapons; it nonetheless concluded "qualitatively" that destruction of any chemical weapons would cost much less than making them.

Whether this billion dollars—or some smaller or larger sum—will be spent destroying the national stockpile naturally depends on a final decision to go ahead with destruction. While this decision has not yet been made, the military's investment in CAMDS is widely interpreted—even by the Army—as a sign that a green light for operations will be given as soon as CAMDS is shown to work.

However, the Army's involvement in chemical weapons stockpiling will not end there. Recent military budgets have awarded increases to the Army Chemical Corps to develop binary weapons—munitions equipped with separate chambers of two "nonlethal" gases

Briefing

Auto Catalyst to Stay for 1975

The Administrator of the Environmental Protection Agency (EPA), Russell E. Train, has decided to keep the agency's catalytic emission control program on track, despite a threat to the plan which nearly derailed it last month. In testimony before the Senate subcommittee on air and water pollution of the committee on public works on 6 November, Train announced that EPA would continue to insist that auto-makers install catalytic converters on all 1975 model cars to be sold in California, or, roughly one-tenth of all new 1975 cars. Train termed the catalyst "critical" to the nation's environ-

mental program, despite the recent evidence that the catalyst converts sulfur in gasoline into sulfuric acid mist in quantities that could pose a serious health hazard (*Science*, 26 October).

However, Train conceded that the sulfuric acid mist problem appeared highly serious. He said that, along with the 1975 plan, EPA would accelerate analysis of the acid mist problem and, in the next several weeks, it would solicit the views of "all interested parties." The decision leaves open two related questions: whether EPA will force auto-makers to install converters on most of the 1976 model cars, and whether it will require oil companies to eliminate virtually all sulfur from gasoline.

Apart from the EPA decision, the hearings uncovered an odd set of bed-

fellows. General Motors, which has invested a lot of money in pollution control and says it will install catalysts on "many, if not all," of its 1975 automobiles, testified in favor of keeping the catalyst on. But in taking this line, GM parted ways from its historic allies, in the pollution control fight, Ford Motor Co. and Chrysler Corp. Both Ford and Chrysler sought to delay the catalyst. In so doing, GM this time found itself on the same side as one Ralph Nader, whose spokesman on auto pollution matters, Clarence M. Ditlow, testified in favor of keeping to the catalyst program. Ditlow pointed out that some sulfuric acid mist is emitted by non-catalyst-equipped cars as well, and therefore concluded: "Only removal of sulfur from gasoline will eliminate the problem."—D.S.

which combine to form nerve gas upon firing.

From references in official testimony, it seems obvious that the Chemical Corps regards binaries—which are easier to store and transport from safety and environmental standpoints—as the wave of the future. In fact, the Army is considering building up a stockpile of binaries. Secretary of the Army Howard H. Calloway said in congressional testimony last month, after discussing the advantages of binary weapons: “Consideration is being given to the possibility of eventually replacing the national stockpile with this type of munition.” Or, as one outside source commented, the Army will spend, between now and 1985, \$1 billion on destroying existing stocks and perhaps more than \$100 million on binary production, and then “it will be right back where it started.”

There are those, both in Congress and in the technical community, who question the wisdom of having a national stockpile at all. Among them is Congressman Wayne Owens (D-Utah), whose district includes the Army base at Tooele, where CAMDS is under development. Owens has argued that there are serious questions as to whether a national chemical weapons stockpile benefits United States security interests and its overall strategic position. More vehemently, Kistiakowsky finds the prospect of a stockpile “extraordinarily stupid,” particularly a stockpile of binaries, which by comparison with conventional chemical weapons are fairly easy to come by. “Once the binary technology develops,” Kistiakowsky says, “. . . it is sure to proliferate in the direction of less developed countries, thus increasing the likelihood of war.”

—DEBORAH SHAPLEY

APPOINTMENTS

Merton D. Van Orden, vice commander, Naval Electronic Systems Command, U.S. Navy, to chief of naval research. . . . **Robert L. Payton**, former president, C. W. Post Center, Long Island University, to president, Hofstra University. . . . **David Mintzer**, associate dean, Technological Institute, Northwestern University, to vice president for research and dean of science at the university. . . . **Donald I. MacLean**, professor of chemistry, Boston

College, to vice president for academic affairs, Creighton University. . . . **Manik Talwani**, interim director, Lamont-Doherty Geological Observatory, Columbia University, appointed director of the observatory. . . . **Glenn G. Thomas**, associate professor of political science, Georgia State University, to dean, School of Arts and Sciences at the university. . . . **Miriam F. Bennett**, professor of biology, Sweet Briar College, to chairman, biology department, Colby College. . . . **Robert Stout**, director of research, Claremont Institute for Administrative Studies, to dean, School of Education, California State University, Fullerton. . . . **Lee F. Brown**, associate professor of history, St. Mary's University, to dean, Graduate School at the university. . . . **James J. Hudson**, professor of history, University of Arkansas, to dean, Graduate School at the university. . . . **Leo K. Bustad**, professor of radiation biology, University of California, Davis, to dean, College of Veterinary Medicine, Washington State University. . . . **C. Roger Smith, Jr.**, professor of veterinary medicine, Ohio State University, to dean, College of Veterinary Medicine at the university. . . . **William J. Byron**, associate professor of social ethics, Woodstock College, to dean, College of Arts and Sciences, Loyola University. . . . **Nathaniel J. Pallone**, associate dean, College of Education, University of Hartford, to dean, University College, Rutgers University. . . . **W. Chester Fitch**, chairman of engineering and technology, Western Michigan University, to dean, College of Applied Sciences at the university. . . . **Thomas Knipp**, assistant dean, College of Arts and Sciences, Kent State University, to dean, College of Arts and Sciences, St. Louis University. . . . **B. Spencer Meeks, Jr.**, professor of chemistry, Moorhead State College, to chairman, chemistry department at the college. . . . **Henry S. Schutta**, associate professor of neurology, University of Pennsylvania School of Medicine, to chairman, neurology department, State University of New York Downstate Medical Center. . . . **Eugene L. Rogers**, clinical assistant professor of physical medicine and rehabilitation, State University of New York Downstate Medical Center, to chairman, rehabilitation medicine department, University of Health Sciences/The Chicago Medical School. . . . **Frank E. Kloster**, visiting professor of medicine, University of Rotterdam, to head, cardiology division, University of Oregon Medical School.

RECENT DEATHS

Harwood S. Belding, 64; professor of environmental physiology, University of Pittsburgh; 6 August.

Hans A. Einstein, 69; professor emeritus of civil engineering, University of California, Berkeley; 26 July.

Angus M. Frantz, 78; former associate clinical professor of neurology, Columbia University; 16 July.

Brewster H. Gere, 62; chairman, mathematics department, Hamilton College; 13 July.

H. Claude Hardy, 86; professor emeritus of sociology, Hartwick College; 7 June.

Herbert H. Hyman, 53; assistant director, chemical division, Argonne National Laboratory; 20 July.

Thomas E. Jones, 85; president emeritus, Earlham College and Fisk University; 5 August.

Richard J. Kokes, 46; chairman, chemistry department, Johns Hopkins University; 27 July.

Claude J. Lapp, 81; retired director of special projects, National Academy of Sciences; 27 July.

George E. Large, 73; former chairman, civil engineering department, Ohio State University; 28 June.

Henry J. Masson, 81; retired assistant dean, College of Engineering, New York University; 3 August.

Thomas T. McClure, 58; plant physiologist, criteria and evaluation division, Office of Pesticides, Environmental Protection Agency; 21 July.

Edgar M. McKown, 77; dean emeritus, University of Evansville, 19 June.

Ernst Papanek, 73; former professor of educational psychology, Queens College, City University of New York; 5 August.

Leo J. Poelma, 80; former professor of veterinary medicine, University of Maryland; 15 August.

Wilbur M. Tidd, 69; professor of zoology, Ohio State University; 30 June.

Alfred Vogl, 78; professor of clinical medicine, New York University School of Medicine; 30 July.

Darrell E. Walker, 53; chairman, horticulture department, Pennsylvania State University; 7 July.

Alexander G. Wesman, 58; vice president, Psychological Corporation; 11 June.

Charles S. White, 62; associate dean, College of Education, University of Houston; 23 June.