MEMORANDUM RCC1.941111.001

DATE: 7 November 1994
TO: Claud Bailey, Jr.
Colonel, AG, USA
Deputy Director
Radiation Experiments Command Center (RECC)
FROM: Brian Thompson, RECC Researcher BHT

SUBJECT: Trip Report to Dugway Proving Grounds, Utah, 31 October - 1 November 1994

PURPOSE: To accompany a contingent of US Army Test & Evaluation Command (TECOM) personnel to Dugway Proving Grounds (DPG) for the purpose of advising and evaluating DPG current and future response to the task of searching for documents related to human radiation experiments.

BACKGROUND: The TECOM group was given two tasks by General Tragemann (Commander, TECOM). First, to complete the search for radiological documents. Second, to develop a plan and an accompanying cost estimate to inventory and catalog all Chemical and Biological Warfare (CBW).

ACTIONS: I participated in two days of meetings devoted to assessing the current situation in relation to the above two tasks and developing coherent responses to these tasks. My main responsibilities were threefold. First, assist TECOM in evaluating what DPG had done to date to address DoD's requests for information related to human radiation experiments. Second, assist in the development of a plan to complete the search for radiological records. Third, evaluate the viability of this plan.

We were also given a tour of the facilities and reviewed the capabilities of the system in the Joint Contact Point Technical Information Center. A program to optically imaging all holdings in the TIC is underway. This information will be available to users by way of INTERNET (See Tab A for more information on DPG and Tab B for more information on the TIC).

PLAN: At this time, the DPG records can be divided into three categories. The TIC, holding 50,000 plus classified and unclassified documents; boxed record holdings comprising approximately 700 linear feet of records; and the "animal barn" which holds an undetermined quantity of material.

The TIC has indexed all of its records on an on-line system. The records search will be completed by means of keyword searches followed by physical review of all pertinent records. The number of keyword search

will be expanded to improve the quality of the information derived during the search process.

The documents from records holding will be reviewed in two stages. First, reviewers will review SF-135's to narrow the scope of the record search. COL. Kolbrenner from OSD has been through many of the boxes and will assist DPG to identify pertinent boxes for review. Second, a physical review of boxes that have been identified as containing possible radiation experimentation information.

The search strategy for the "animal barn" will be determined after an initial review of what the holding area contains is completed.

COMMENTS: Mr. Steve Geisinger is the new point of contact at DPG for our Command Center. He is now responsible for overseeing the completion of the record review.

The personnel from TECOM were responsible for more than developing a plan for review human radiation experiments information. I assisted in developing a plan that will allow DPG to complete the human radiation experiments review. I believe this can be done in a short period of time with existing resources at DPG, although that determination will be made by DPG/TECOM. The CBW problem is a much more personnel -power intensive problem, however, this is outside of our purview at this time. Tab C provides information on the DPG personnel assigned to the Chemical, Biological, Radiological Review, summaries of various record holdings at DPG, newspaper articles and other information.

I was impressed by the quality of the TECOM personnel, especially Ms. Judy Matthews and Mr. John Mallamo. I am confident that the approach they develop to complete this task, as an outgrowth of our two days of meetings, will meet our goals in a timely manner and that any follow up to ensure completion will be taken.

CC: Ellen Ziegler
RECC Routing
Administrative File
RECC Library

FACT SHEET

Combined Chemical Test Facility

BACKGROUND:

This modern 35,000-square-foot facility supports the testing of protective clothing and masks, detectors and decontamination systems using chemical agents as challenge materials. Tests determine the survivability of military equipment when exposed to chemical agents. Testers here also analyze agents, simulants and other analytes in samples which were collected in laboratory and chamber trials. The facility also supports the analysis of environmental samples from DPG operations to ensure compliance with Federal, State and local regulations.

SAFETY FEATURES:

The exhaust system, with redundant fans, controls and alarms, provides airflow for fume hoods used for all agent operations. The building's pressurization system keeps laboratory rooms at a more negative air pressure than corridors, which in turn are kept more negative than the offices. Emergency generator capacity supports the fume hoods, ventilation system, egress lighting, and other essential equipment in the event of a power loss. Emergency showers and eyewashes are provided in the laboratories and corridors. Epoxy and stainless steel work surfaces and interior finishes are resistant to chemical agents. A piping system for commonly used compressed gases reduces the need to store gas cylinders in the laboratory rooms. A separate bulk solvent storage building minimizes storage of flammable materials in the laboratory building.

ENVIRONMENTAL PROTECTION:

Contaminated water from any agent spill cleanup or from emergency shower use is contained by a double-wall drain system and a 5,000-gallon holding tank. The exhaust air from all laboratory areas (not only fume hoods) is charcoal filtered before returning to the atmosphere.

ENERGY SAVING:

A demand-controlled variable volume ventilation system minimizes the volume of air requiring heating or cooling. Heat-recovery coils downstream of fume hood filter units recover energy from exhausted air. Motion sensors automatically turn off lights in unoccupied rooms. Thick wall and roof insulation and heat-reflector windows minimize heat transfer through building shell.

SECURITY:

All agent storage areas have concrete vault construction, high security hardware and locks, and an intrusion detection system. Exterior windows have security screens, and double fences with barbed wire surround the buildings. Security guards operating from a permanently manned guardhouse control personnel and vehicle access.

FACT SHEET

Materiel Test Facility

PURPOSE:

When completed, the Materiel Test Facility will support indoor testing of large-scale military vehicles and equipment in hazardous environments.

SAFETY:

Safety has been maximized through advanced control technology, total redundancy and failsafe containment. The minimization and containment of all hazardous emissions will provide stringent environmental protection.

FACTS:

The facility's **Multi-Purpose Chamber**, measuring 50 feet by 50 feet by 30 feet, will accommodate any military equipment that meets NATO shipping requirements. This includes most NATO fighter aircraft (with or without turbine operating), helicopters, as well as all ground vehicles (with or without engine operating). This chamber also will provide environmental conditioning ranging from -65° F to +125° F and 5% to 95% relative humidity. When completed, it will allow persistent and non-persistent agent gross level testing with concentrations up to 1,000 mg/m^3.

The **Agent Transfer Chamber**, which measures 25 cubic feet, will support agent transfers, dissemination and monitoring. Its two fume hoods will have controlled air flow and the agent storage vault will provide efficient on-site storage.

The **Closed System Chamber**, which also measures 25 cubic feet, will provide an integral system to supply climatically conditioned air to the gloveboxes.

The facility's on-site fresh decontamination and spent decontamination systems for liquid containment will lower hazardous waste costs, and the on-site medical aid station will include a negative-pressure toxic isolation cubical.

The Materiel Test Facility is scheduled for completion in June 1995 at a total cost of $32 million. All parties involved in the completion of this facility, to include Hensel Phelps Construction Company, the U.S. Army Corps of Engineers, the U.S. Army Materiel Command, the U.S. Army Test and Evaluation Command, all sub-contractors and Dugway Proving Ground (as the customer), formed a partnership at the outset. This allowed open communication and the breaking down of paradigms on the part of all involved, facilitating the completion of a viable, state-of-the-art test facility which will meet the customer's needs.

FACT SHEET

Life Sciences Test Facility

BACKGROUND:

This state-of-the-art 32,000-square-foot facility will support the testing of biological detectors, protective clothing and equipment, and decontamination systems and their effects on materials. It will also support field tests with biological simulants, and smoke and obscurants, as well as environmental analysis and monitoring for all Dugway Proving Ground testing. Approximately 2,000 square feet of the completed facility will accommodate Biosafety Level 3 (BL 3) testing. (BL 3 applies to facilities in which work is performed using indigenous or exotic agents with a potential for respiratory transmission, and which may cause serious and potentially lethal infection. Laboratory personnel have specific training in handling pathogenic and potentially lethal agents, and are supervised by competent scientists who are experienced in working with these agents.) DPG's existing biological test facility, Baker, was built in 1952 and has a limited life expectancy. Due to its age, it is very expensive to operate and to maintain. Three suites in the existing Baker Test Facility were completely remodeled in 1989 to meet current BL 3 safety standards. Since completion, these suites have been inspected by biological safety experts from the U.S. Army Medical Research Institute for Infectious Diseases, the Centers for Disease Control and the Utah Department of Health. They meet or exceed all requirements.

COST:

The original programmed amount of $16.5 million has been approved by Congress; however, the U.S Army Corps of Engineers is reprogramming for additional funds.

DATE OF COMPLETION:

The construction contract should be awarded in the February-April 1995 timeframe, depending on Congress' approval, with the completion planned for October-November 1996.

SUPPORTING ENVIRONMENTAL DOCUMENTS:

DPG professionals conduct biological defense tests in full compliance with the National Environmental Policy Act. This testing has been addressed in the Biological Defense Research Program Programmatic Environmental Impact Statement, the Life Sciences Test Facility Final Environmental Impact Statement, and the Baker Test Facility Environmental Assessment. Records of Decision are also prepared prior to each test and are submitted to the State.

FACT SHEET

BangBox

A state-of-the-art environmental testing system

PURPOSE:

To evaluate the environmental viability of Open Burn/Open Detonation

INTRODUCTION:

For more than 40 years, open burning/open detonation procedures have been the mainstay of energetic ordnance disposal activities. The picture in 1982 included a mammoth inventory of unwanted energetic munitions, increasing public interest regarding open-air disposal, and strengthened environmental regulations. The question then became, "How can the Department of Defense, the Department of Energy, industry and foreign governments reduce dangerous inventories of unwanted energetic materials in an environmentally safe manner?" Destroying energetics using processes which are efficient, safe and environmentally clean became our environmental challenge.

HISTORY:

The DPG BangBox system development included a preliminary test in 1985, a symposium in 1988, BangBox test in 1989, field testing from 1989 to 1990, results review in 1991 culminating in the new advanced 50-foot diameter air-supported facility located at DPG in 1992.

TODAY:

The Dugway Proving Ground OB/OD testing system is a specialized and dedicated facility. A team of expert personnel uses advanced instruments and technologies in a strong quality assurance/quality control program. Their strong working relationship with the U.S. Environmental Protection Agency has ensured maximum credibility.

ELEMENTS OF SUCCESS:

Following DPG's BangBox testing, science now is replacing emotion. USEPA and State environmental regulators who participate in the BangBox process include the Office of Solid Waste, the Atmospheric Research and Exposure Assessment Laboratory, and the USEPA Region VIII. Several states now require BangBox-type data as part of their permit requirements. The program's oversight includes a Technical Steering Committee, methodical scientific investigation, thorough documentation, as well as independent audits and reviews. The DPG BangBox Testing System has answered the following questions: What is the nature of the emissions produced? How can the soil and atmosphere be sampled? What is the distribution of emittants in the soil and atmosphere? How can the total release of emissions be determined?

CONCLUSION:

The DPG OB/OD Technical Team has developed a testing system which accurately replicates real-world disposal operations. Elements of the USEPA/State regulators have validated and accept emissions data produced by the BangBox Testing System.

FACT SHEET

Environmental Program Office

Conservation/Preservation Division

MISSION:

The primary focus of ongoing field studies by the Conservation/Preservation Division is to verify observations and conclusions of historic ecology and epizoology studies of native fauna conducted at Dugway Proving Ground from 1952-1974 that focused on faunal relationships with naturally occurring pathogens and arthropod vectoring, open-air testing of biological pathogens and vectors, and live-agent chemical testing. These studies concluded that there was no evidence that military operations have had toxicological impact upon the DPG environment.

Conclusions from baseline floral and faunal inventories, and other ecological studies will be used to develop and implement a Natural Resource Management Plan. This plan will set in place a strategic, proactive management plan that will:

- Address all natural resources matters and issues,
- Comply with pertinent federal and state natural resource laws,
- Be compatible with testing and training mission objectives,
- Be flexible enough to be modified to include advances in technology, yet withstand changes in personnel, policies, and administration.

BACKGROUND:

DPG consists of 802,724 acres in west-central Utah. Generally described, DPG consists of cold northern desert shrub habitat with halomorphic soils, interspersed with insular islands of sagebrush-steppe and juniper.

The primary mission of DPG is the testing of chemical and biological defense and detection systems (inclusive of military obscurant smokes). There are many tenant activities in addition to mission testing, such as the Utah Army National Guard training, I Corps Artillery (wheeled and tracked, 155mm and 8-inch tubes), and a variety of contractors.

Historically, DPG has conducted open-air biological, chemical, and radiological testing, and testers now conduct open-air programs using chemical and biological simulants and military obscurant materials. The need for chemical and biological testing still remains, principally detection and defense aspects. However, open-air testing using chemical agents or biological pathogens and toxins no longer occurs. Any live agent testing occurs in sealed containment chambers.

Current studies by the Conservation/Preservation Division include:

- Captured and radiotagged 5 kit fox (Utah Species of Special Concern) and 1 red fox; initiated monitoring of habitat and prey resource utilization; observed and documented grey fox at DPG.

- Captured and radiotagged a single burrowing owl (Federal Category 2 species); monitored habitat and prey resource use.

- Observed and documented breeding of snowy plovers (Federal Category 2 species). Note that DPG road construction activities have enhanced existing habitats and created new suitable breeding habitats. Radiotagging to determine nesting areas and habitat use will be a cooperative effort with US Fish and Wildlife Service personnel at Fish Springs National Wildlife Refuge during FY-95.

- Small mammals (rodents and lagomorphs) were sampled within the training areas at DPG to determine diversity, distribution, and density within several habitat types prior to, during, and after Utah Army National Guard annual training activities.

- Bats were sampled to determine the presence/absence of selected Federal Category 2 species.

- DPG contributes to nationwide monitoring of avian population studies (MAPS) by monitoring and banding - birds, especially raptors and Neotropical migratory birds, have been shown to be excellent indicators of environmental change.

- Captured and radiotagged 5 pronghorn antelope in cooperation with Utah Division of Wildlife Resources; monitor movement and habitat use.

- Utah Heritage Foundation observed and documented Ute's ladies tress (federally threatened species of orchid) directly adjacent to DPG on the Bagley Ranch, Callao, UT.

- Observed and documented (including collection and cataloging) 30 new plant species. Note that DPG hosts one of the largest intact vegetated sand dunes remaining in the entire Great Basin (200,000 mi^2), which remains largely pristine and unspoiled due to DPG's efforts to restrict vehicular and pedestrian access. These sand dunes are a natural resource asset for regional land management.

- Implemented a plant community classification and composition study including comparison with control areas off-DPG.

- Initiated a management plan to meet the multiple-use demands and ensure long-term conservation of natural resources for training areas (54,730 ac) at DPG on a sustained basis.

- Initiated a two-phase COE wetland inventory and delineation for all of DPG. Preliminary results indicate that about 60% of DPG (ca. 480,000 ac) may be categorized as wetlands based on soil types, presence of water during the growing season, and hydrophytic plant species. However, under the Clean Water Act, the overwhelming majority of these wetlands are exempt from Section 404 considerations. The wetland study will be concluded during FY-95 and should permit considerable flexibility for future test planning.

PLANT COMMUNITY CLASSIFICATION BASED ON DOMINANT SPECIES
U.S. Army Dugway Proving Ground

Wyoming sage community (*Artemisia tridentata var.wyomingesis*) - This community covers higher elevation sites above the juniper zone. It is especially dominant at the ridge tops of the Cedar Mountains.

Juniper-sagebrush community (*Juniperus osteosperma*) - This community is dominated by Utah Junipers but fingers into the black sage community at higher elevations and the big sage community at lower elevation.

Big sage community (*Artemisia tridentata*) - This community occupies an area below the Juniper zone. Much of this community has been displaced by the Annual grass-form community.

Little horsebrush community (*Tetradymia glabrata*) - This species is dominant in some areas on Camels Back ridge.

Annual grass-form community (*Bromus tectorum, Salsola iberica, Sisymbrium altissimum*) - This community has displaced much native habitat along the foothills and in the canyons of our mountain ranges.

Winter fat community (*Ceratoides lanata*) - There are a few stands of winter fat at DPG.

Greasewood community (*Sarcobatus vermiculatus*) - Greasewood is a dominant shrub over large areas on DPG. It often forms an ecotone community with shadscale.

Seepweed community (*Sueuda torreyana*) - Torrey seepweed is usually a subdominant species in either the greasewood or shadscale community. There are a few areas where Torrey seepweed is the dominant species.

Shadscale community (*Atriplex confertifolia*) - Shadscale is the dominant species over large areas at DPG. It often is mixed with several subdominants including; greasewood, Torrey seepweed, Gray molly, and Gardner saltbush.

Gray molly community (*Kochia americana*) - Gray molly becomes the dominant species in several areas at low elevations.

Gardner saltbush community (*Atriplex gardnerii*) - This is a dominant species at a few sites.

Pickleweed community (*Allenrolfea occidentalis*) - Pickleweed covers large tracts of saline soils that have adequate moisture on DPG. This community is largely homogeneous. Soils have wetland characteristics and this community supports wetland values and functions.

Alkali sacaton community (*Sporobolus airoides*) - Small areas of saline soil are dominated by this grass species.

Saltgrass community (*Distichlis spicata*) - Small stretches of this community exist on the DPG border adjacent to Fish Springs National Wildlife Refuge.

Rush community

Cliff-crevice community

Vegetated dune community (*Oenothera pallida, Psoralidium lanceolatum*) - This community occupies large areas of DPG. It is a very rich community in species richness, containing nearly 1/6 of all plant species on base.

Zones (The following zones need further investigation to identify prevalent communities);

Riparian-wetlands - This "Zone" designation is intended to describe the spring and seep areas of DPG until further composition studies.

Species of Special Management Concern identified by US Fish and Wildlife Service (*Migratory Nongame Birds of Management Concern in the United States: the 1987 List*).

snowy plover	*Charadrius alexandrinus*
long-billed curlew	*Numenius americanus*
Swainson's hawk	*Buteo swainsoni*
ferruginous hawk	*Buteo regalis*
merlin	*Falco columbarius*
burrowing owl	*Athene cunicularia*
willow flycatcher	*Empidonax traillii* subspp.

Neotropical Migratory Birds (a Neotropical migrant is defined as any bird species nesting in the United States or Canada and wintering in the highlands of Mexico, Central, or South America, including the Caribbean Islands).

Swainson's hawk	*Buteo swainsoni* *
long-billed curlew	*Numenius americanus* [Category 3c]
burrowing owl	*Athene cunicularia* *
common nighthawk	*Chordeiles minor* *
white-throated swift	*Aernautes saxatalis*
calliope hummingbird	*Stellula calliope*
broad-tailed hummingbird	*Selasphorus platycerus*
rufous hummingbird	*Selasphorus rufus*
olive-sided flycatcher	*Contopus borealis*
western wood peewee	*Contopus sordidulus*
dusky flycatcher	*Empidonax oberholseri*
gray flycatcher	*Empidonax wrightii*
willow flycatcher	*Empidonax traillii* subspp.
ash-throated flycatcher	*Myiarchus cinerascens*
western kingbird	*Tyrannus verticalis* *
violet-green swallow	*Tachycineta thalassina*
northern roughed-wing swallow	*Stelgidopteryx serripennis*
bank swallow	*Riparia riparia*
cliff swallow	*Hirundo pyrrhonta* *
barn swallow	*Hirundo rustica* *
house wren	*Troglodytes aedon*
blue-gray gnatcatcher	*Polioptila caerulea* *
gray catbird	*Dumetella carolinensis*
northern mockingbird	*Mimus polyglottos* *
sage thrasher	*Oreoscoptes montanus* *
solitary vireo	*Vireo solitarius*
warbling vireo	*Vireo gilvus*
red-eyed vireo	*Vireo olivaceus*
orange-crowned warbler	*Vermivora celata*
Virginia's warbler	*Vermivora virginiae*
yellow warbler	*Dendroica petechia*
American redstart	*Setophaga ruticilla*
common yellowthroat	*Geothlypis trichas*
western tanager	*Piranga ludoviciana*
black-headed grosbeak	*Pheucticus melanocephalus*
lazuli bunting	*Passerina amoena*

green-tailed towhee	*Pipilo chlorurus*
chipping sparrow	*Spizella passerina*
Brewer's sparrow	*Spizella breweri*
lark sparrow	*Chondestes grammacus*
lark bunting	*Calamospiza melanocorys*
bobolink	*Dolichonyx oryzivorus*
yellow-headed blackbird	*Xanthochephalus xanthocephalus* •
northern oriole	*Icterus galbula*

• - denotes confirmed breeding status @ DPG 1994

Summary of threatened, endangered, and sensitive (TES) species at or near US Army Dugway Proving Ground, Tooele County, Utah

Administrating Agency	**Number of Species**
US Fish and Wildlife Service (USFWS)	4 species Endangered or Threatened 12 species Category 2 7 species of Special Concern 44 Neotropical migratory birds
Utah Division of Wildlife Resources (UDWR)	1 threatened species 5 species of Special Concern

INFONET

CBW INFORMATION

NETWORK

COLLECTION PROFILE

- DPG Collection dating to early 1940's
- Fort Detrick Collection added 1971
- Deseret Test Center Collection added 1974
- Panama Test Center Collection added 1989
- Tri and Quadripartite documents since 1950
- Chemical Treaty documents

INFONET DEVELOPMENT

FIRST OBJECTIVE: Access

- Selected a user friendly search engine (BRS)
- Selected and trained personnel in document cataloging and retrieval
- Prepared 60,000 Documents/Books for easy access
- Integrated database into Dugway network
- Project completed in 1989

INFONET development

Total access/preservation

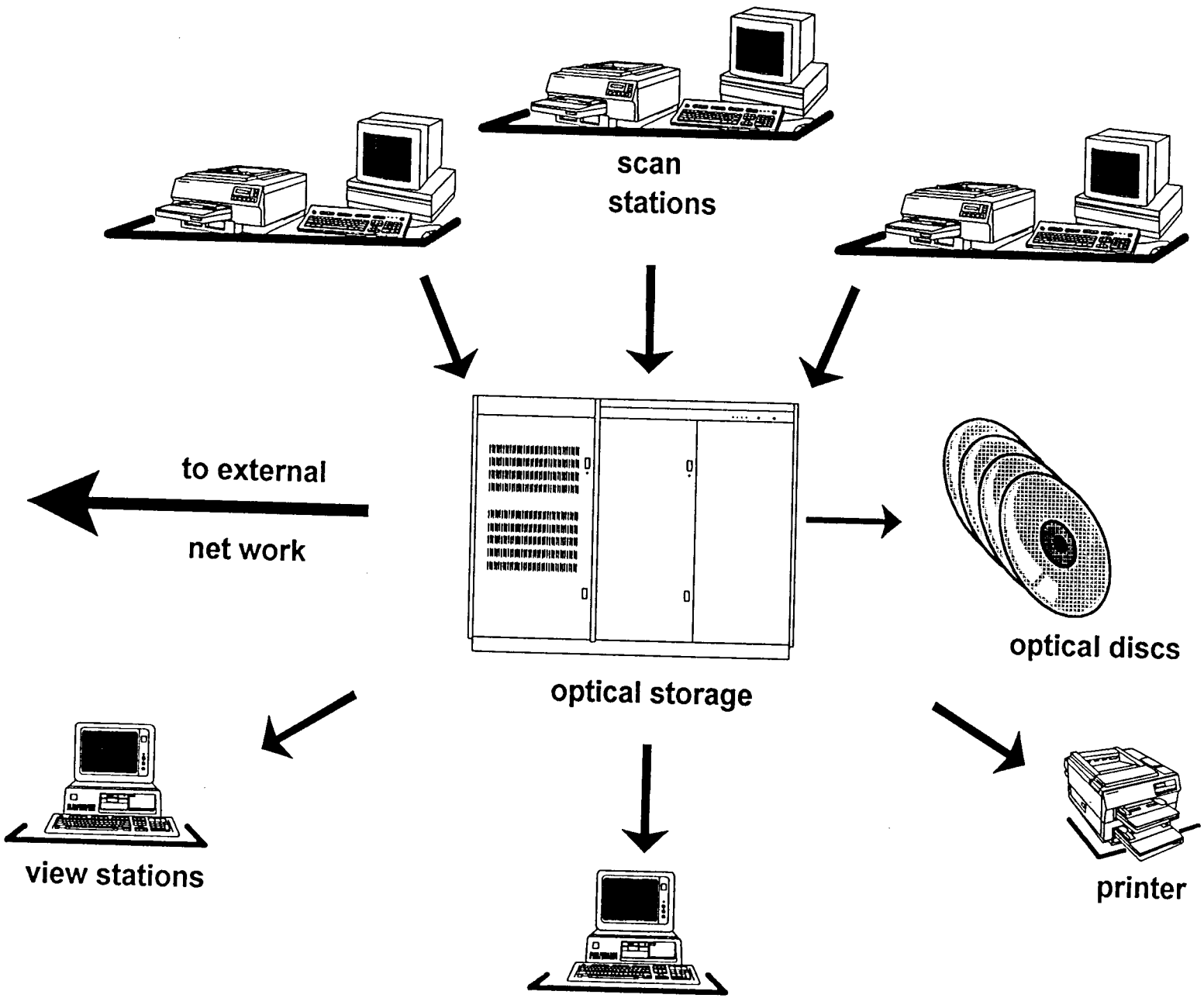
- Received task from OSD in 1990
- Funded through DO49
- Project completion date, December 1997

INFONET DEVELOPMENT

SECOND OBJECTIVE: Total access/preservation

- Equipment acquisition 1991
- Obtained and trained personnel in Image storage and retrieval 1991
- Document scanning commenced 1992
- Software development and integration in-process
- Availability; catalog: Now Images:FY95

INFONET

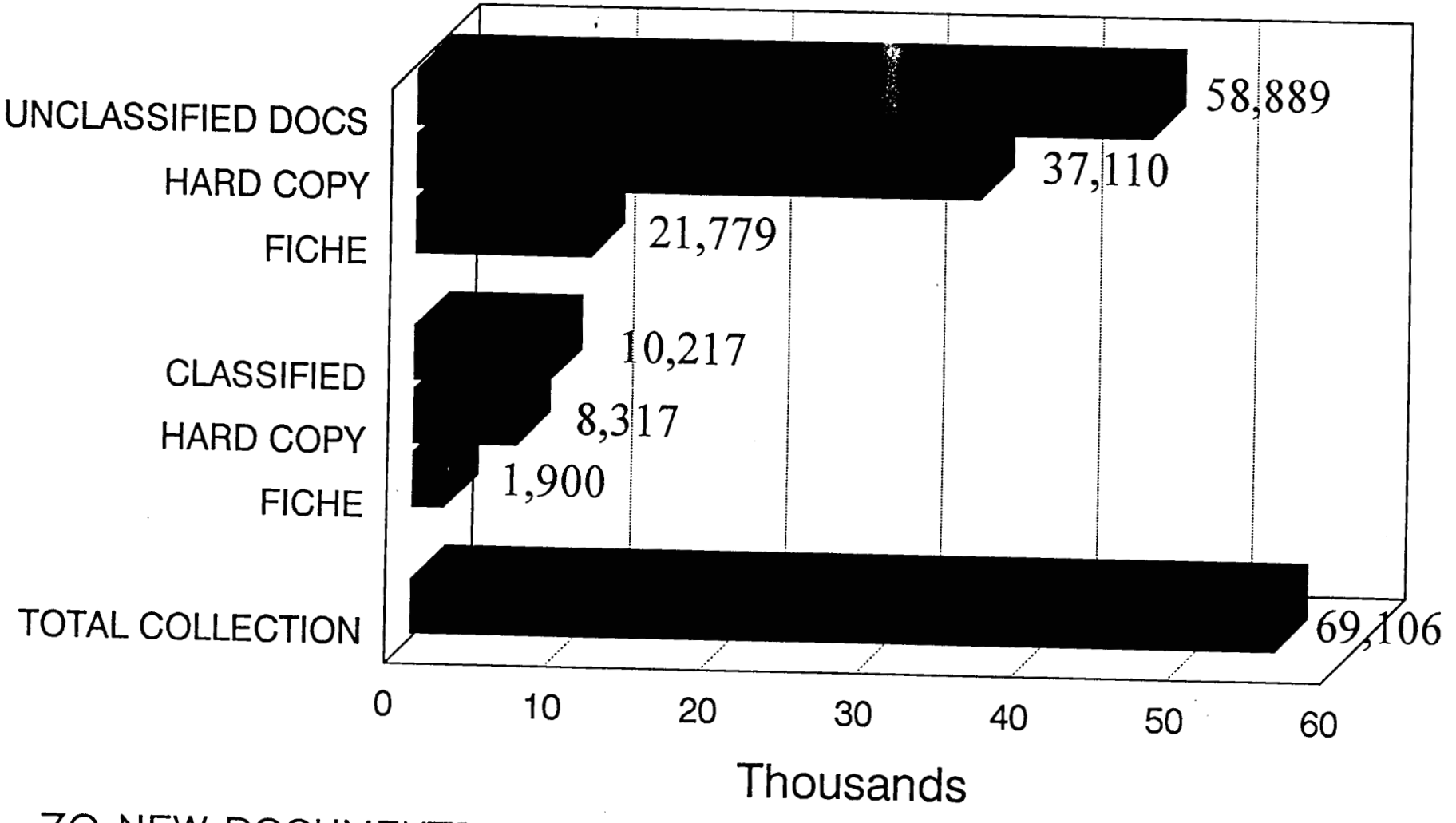

scan
stations
to external
net work
optical discs
optical storage
view stations
printer

INFONET DEVELOPMENT

STATUS:11/94

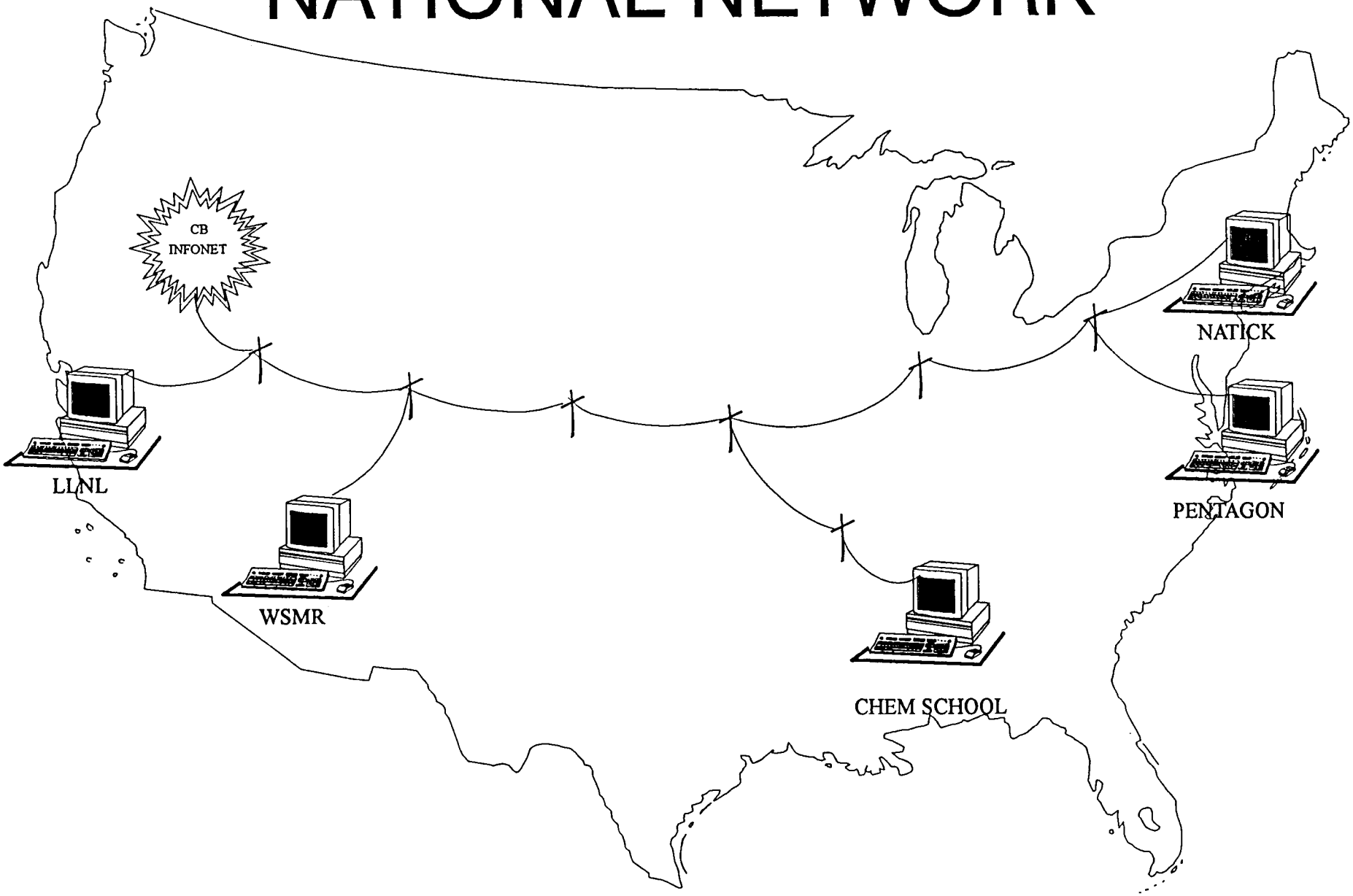
- Total pages scanned
  1,400,000
- Average daily production
  3,000 pages scanned
- Total scanned documents available
  20,000

COLLECTION PROFILE



70 NEW DOCUMENTS ADDED PER MONTH

NATIONAL NETWORK



REQUIREMENTS FOR ACCESS

PROVIDED BY USER

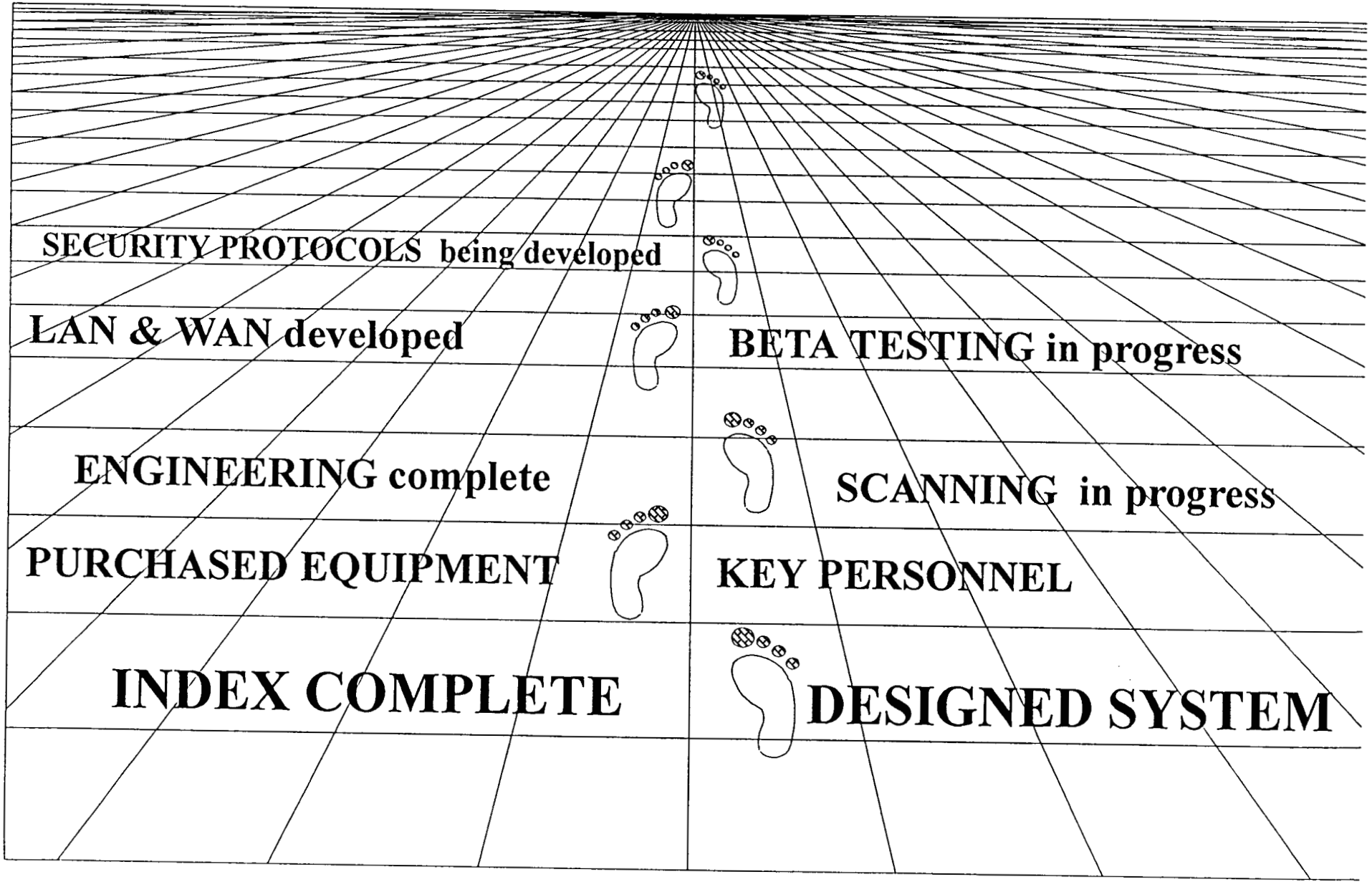
- IBM Compatible 386 or better
- Windows 3.1 or better
- MS DOS 5.0 or better
- LAN Ethernet Card
- Internet Gateway address (ARPANET)

REQUIREMENTS FOR ACCESS

PROVIDED BY US

- ADD + Image (Laser Data)
- IPX Software (Novell)
- TCP/IP (Novell)
- Support

NATIONAL AVAILABILITY



FOR OFFICIAL USE ONLY

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WELCOME TO DUGWAY PROVING GROUND

FROM THE DUGWAY INFORMATION ACTION TEAM (DIAT)

dugway proving ground utah

27 OCT 1994

KEY DUGWAY PERSONNEL FOR DUGWAY INFORMATION ACTION

COL. EUGENE FUZY WENDY HARN	COMMANDER STEDP-CO	EXT 3314
DR. I. GARY RESNICK ELAINE SMITH	ACTING TECHNICAL DIRECTOR STEDP-TD	EXT 5416
MR. SCOT BRIDGES WENDY HARN	EXECUTIVE ASSISTANT STEDP-EA	EXT 3314
MR. ROY KEELING	DIRECTOR, INFORMATION MGMT (RECORDS HOLDING)	EXT 3441
DR. WM. CHRISTIANSEN	DIRECTOR, JOINT CONTACT POINT (TECHNICAL INFORMATION CENTER)	EXT 3371
MR. WAYNE RINDLISBACHER	CH, COUNTERINTELLIGENCE OFFICE	EXT 2910
MAJ. BRUCE EVANS	LEGAL OFFICER	EXT 3333
MRS. MELINDA PETRIE	PAO	EXT 2116
MR. CARL JORGENSEN	CH, ENVIRONMENTAL PROGRAM OFFICE	EXT 3417
MR. STEVE GEISINGER	INFORMATION ACTION OFFICER	EXT 3371/2910

AREA CODE 801 PREFIX 831
DSN 789
MOUNTAIN TIME ZONE

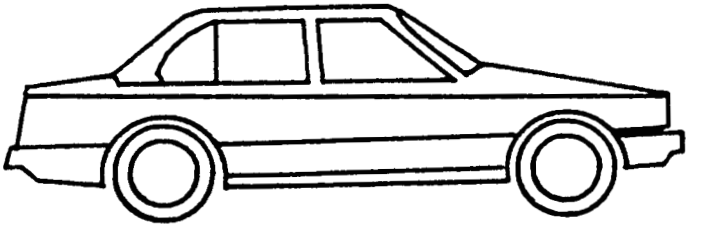
MAPS AND ILLUSTRATIONS

HOW TO GET TO DUGWAY

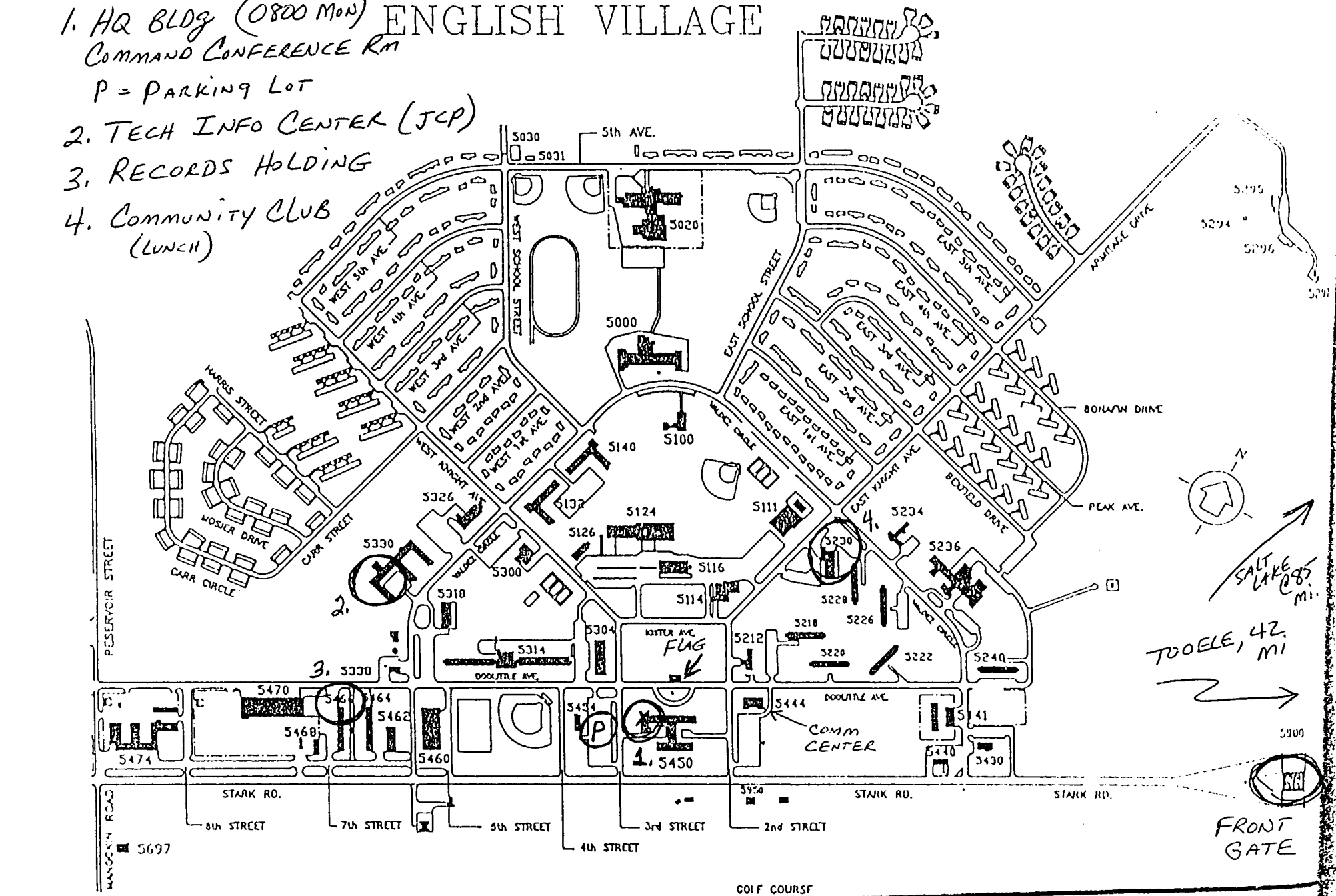
FROM SALT LAKE CITY: Take I-80 West to the Tooele/Grantsville exit. Follow Route 36 south through Erda, Tooele and Stockton. (Last gas station is at Stockton). Beyond Stockton, the highway will split. Stay right on Route 36. Turn right at the Clover exit onto Route 199. Follow Route 199 to Dugway (approximately 25 miles from Clover).

ALTERNATE ROUTE FROM SALT LAKE CITY: Take I-80 West. Exit at Rowley Junction (Exit 77). Follow Skull Valley Road south to Dugway. No facilities are available between Rowley Junction and Dugway.

FROM PROVO: Take I-15 North to the Lehi exit. Follow Route 73 west through Cedar Fort. (Cedar Fort is last available stop for gas and facilities before reaching Dugway). Route 73 ends near St. Johns Station at Route 36. Turn left. Follow Route 36 south to the Clover exit. Turn right onto Route 199. Follow Route 199 to Dugway.



1. HQ BLDG (0800 MON)
COMMAND CONFERENCE RM
P = PARKING LOT
2. TECH INFO CENTER (JCP)
3. RECORDS HOLDING
4. COMMUNITY CLUB
(LUNCH)



THE PURPOSE OF THE MEETING AND FOLLOW-ON TEAM WORK WILL BE TO DEVELOP AN ACTION PLAN CONTAINING PROCEDURES FOR THE IDENTIFICATION, REVIEW, DECLASSIFICATION AND RELEASE OF CHEMICAL, BIOLOGICAL AND RADIOLOGICAL (CBR) DOCUMENTS AT DUGWAY PROVING GROUND.

THE TEAM WILL DEVELOP SPECIFIC PROCEDURES FOR THE REVIEW AND DECLASSIFICATION AND/OR RELEASE OF THOSE IDENTIFIED DOCUMENTS. IF SPECIFIC PROCEDURES CANNOT BE FORMULATED, THEN SPECIFIC PROBLEM AREAS WILL BE IDENTIFIED FOR RESOLUTION.

DOCUMENTATION TO BE REVIEWED WILL FALL INTO FIVE CATEGORIES:

PERTAINING DIRECTLY TO TESTING DONE AT DUGWAY

A) CHEMICAL,
B) BIOLOGICAL,
C) RADIOLOGICAL,

D) CBR DOCUMENTS WHICH ADDRESS OTHER TESTING SITES (I.E. ALASKA, PANAMA, OTHER)
E) CBR DOCUMENTS WHICH WERE CO-PUBLISHED BY THE U.S. AND INTERNATIONAL PARTNERS.

THE GROUP WILL WORK SPECIFIC ISSUES. THESE ISSUES COULD CONSIST OF, BUT NOT BE LIMITED TO THE FOLLOWING:

A) HOW MANY DOCUMENTS IN EACH CATEGORY ARE INVOLVED ?
B) HOW MUCH TIME IT WOULD TAKE TO REVIEW THESE DOCUMENTS FOR APPLICABILITY AND DECLASSIFICATION AND/OR RELEASE ?
C) WHAT RESOURCES WOULD BE INVOLVED, SPECIFICALLY MANPOWER, FUNDS AND EQUIPMENT ? (COPYING MACHINES AND PAPER; WE DO NOT WANT TO "GIVE AWAY" OUR ORIGINAL COPIES),
D) ON-SITE DECLASSIFICATION AND RELEASE. BY WHOSE AUTHORITY ?
E) DOCUMENTS STORED IN THE RECORDS HOLDING AREA.
F) MUST DOCUMENTS BE INDIVIDUALLY "PULLED" FROM THE SHELVES AND REVIEWED ? HOW MANY ?
G) HOW SHOULD INTERNATIONAL DOCUMENTS AND OUTSIDE ORIGINATORS BE HANDLED ?
H) WHAT PROCEDURE(S) SHOULD BE FOLLOWED IN SEARCHING (I.E. KEY-WORD, PAGE-BY-PAGE, ETC) ?
I) CAN DCSOPS (FOIA INITIAL DENIAL AUTHORITY) ASSIST DPG BY NOTIFYING US PRIOR TO A RELEASE OF FOIA INFORMATION TO A REQUESTOR ? (DPG CAN BE PROACTIVE VS REACTIVE)

SPECIFIC PROBLEM AREAS WHICH WILL BE ADDRESSED:

A) NUMBERS OF DOCUMENTS BY CATEGORY AND AMOUNT OF PAGES - IMPACTS ON TIME, PERSONNEL AND COPYING COSTS.
B) HOW COULD DECLASSIFICATION AND RELEASE BE ACCOMPLISHED ON SITE ? BY WHOSE AUTHORITY ?
C) THE COORDINATION AND REVIEW NEEDED WITH OTHER COUNTRIES (I.E. ENGLAND, CANADA, GERMANY, ETC) TO ADDRESS DECLASSIFICATION AND/OR RELEASE OF DOCUMENTS PUBLISHED THROUGH INTERNATIONAL COOPERATION (I.E. TRIPARTITE OR DOCUMENTS CONTAINING FOREIGN GOVERNMENT INFORMATION (FGI).
D) PROBLEMS ASSOCIATED WITH THE DECLASSIFICATION AND RELEASE OF RADIOLOGICAL DOCUMENTS,
E) DECLASSIFICATION AND RELEASE ISSUES REGARDING DOCUMENTS ORIGINATING FROM "OTHER THAN DOD,"
F) DOCUMENTS WHICH ARE DIFFICULT TO WORK WITH (I.E. DOCUMENTS IN POOR SHAPE, OLD THERMOFAX COPIES, FRAGILE DOCUMENTS, DOCUMENT UNBINDING/BINDING),
G) DOCUMENT ACCOUNTABILITY AND PACKAGING (DA FORM 3964S, WRAPPING, PACKAGING, TRUCKS, ETC.)

THE GOAL OF THE TEAM IS TO HAVE A COMPLETED PLAN READY IN THE LEAST AMOUNT OF TIME.

STEDP-INT

28 OCT 1994

MEMORANDUM FOR Commander, Dugway Proving Ground

SUBJECT: Dugway CBR Documentation Review Team

1. On Monday 31 October 1994, a meeting will be held in the Command Conference room. The purpose of the meeting and follow-on team work will be to develop an action plan containing procedures for the identification, review, declassification and release of chemical, biological and radiological (CBR) documents at Dugway Proving Ground. Initially, strawman discussions and a plan will be developed to determine the scope of the problem and to focus on specific problem areas. The team will then develop specific procedures for the review and declassification and/or release of those identified documents. If specific procedures cannot be formulated, then specific problem areas will be identified for resolution. Schedules and flow-charts will be created to provide an orderly method to these processes. The documentation to be reviewed will fall into five categories:

Pertaining directly to testing done at Dugway

a) chemical,
b) biological,
c) radiological,
d) CBR documents which address other testing sites (i.e. Alaska, Panama, other)
e) CBR documents which were co-published by the U.S. and international partners.

2. After the problem is defined, the group will work specific issues. These issues could consist of, but not be limited to the following:

a) How many documents in each category are involved ?
b) How much time it would take to review these documents for applicability and declassification and/or release ?
c) What resources would be involved, specifically manpower, funds and equipment ? (copying machines and paper; we do not want to "give away" our original copies),
d) On-site declassification and release. By whose authority ?
e) Documents stored in the records holding area.
f) Must documents be individually "pulled" from the shelves and reviewed ? How Many ?
g) How should international documents and outside originators be handled ?
h) What procedure(s) should be followed in searching (i.e. key-word, page-by-page, etc) ?

3. When completed, the plan would address all issues ("one stop-shopping") for carrying out the declassification and release of applicable documents. Specific problem areas which will be

addressed will be:

a) Numbers of documents by category and amount of pages - impacts on time, personnel and copying costs.
b) How could declassification and release be accomplished on site ? By whose authority ?
c) The coordination and review needed with other countries (i.e. England, Canada, Germany, etc) to address declassification and/or release of documents published through international cooperation (i.e. Tripartite or documents containing Foreign Government Information (FGI).
d) Problems associated with the declassification and release of radiological documents,
e) Declassification and release issues regarding documents originating from "other than DoD,"
f) Documents which are difficult to work with (i.e. documents in poor shape, old thermofax copies, fragile documents, document unbinding/binding),
g) Document accountability and packaging (DA Form 3964s, wrapping, packaging, trucks, etc.)

4. The goal of the team is to have a completed plan ready in the least amount of time. A planning goal would be less than two weeks. However, appropriate time will be taken depending upon the scope of the problem resulting in a quality product.

4. The team will consist of the following personnel:

From DPG:

a) Stephen Geisinger - INT,
b) Frank Massaro - JCP,
c) JCP library chief, and applicable staff,
d) Wayne Rindlisbacher - INT,
e) others, as needed,

From other agencies:

f) Judy Matthews and Barbara Hornberger - TECOM Information,
g) Dick Craig - TECOM RM,
h) Joyce Landbeck - TECOM Security,
i) John Mallamo - TECOM,
j) Britt McCarley - TECOM historian,
k) Jeff Smart - CBDCOM historian,
l) Fred Kolbrener - P&R OUSD,
m) Lester Miller - CBDCOM Rsch Chemist,
n) Kenneth Scheflen - DoD Manpower,

STEDP-INT
SUBJECT: Dugway Documentation Review Team

o) Brian Thompson - RECC
p) CBDCOM Rep
q) DCSOPS Rep

5. Judy Matthews, HQ TECOM, will be in charge of the Team preparing the action plan.

7. POC is the undersigned, at extension 3371/2625.

STEPHEN R. GEISINGER
Action Officer, INT

CLASSIFIED DOCUMENTS - TECHNICAL INFORMATION CENTER
25 OCTOBER 1994

A. IN KEYWORD TERMS; HARDCOPY AND FICHE:

1. RADIOLOGICAL (RADIO$) - 734

2. NUCLEAR (NUCL$) - 668

3. BIOLOGICAL (BIOL$) - 4018

4. CHEMICAL (CHEM$) - 5960

11380 *

* Note: Many documents will have keywords which may pertain to more than one category, so this number will be higher than 9310, which is the BRS version 4.2 language highest total. When duplicates are dropped, the actual number of documents will be approximately 7905. The actual figure is easier to arrive at using BRS version 6.0 which is used for the unclassified catalog. See table at end of these pages.

B. OF THE ABOVE TOTALS, THE FOLLOWING NUMBERS PERTAIN TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY):

1. RADIOLOGICAL (RADIO$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 72

2. NUCLEAR (NUCL$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 30

3. BIOLOGICAL (BIOL$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 1391

4. CHEMICAL (CHEM$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 782

C. OF THE TOTALS IN PARA A, THE FOLLOWING NUMBERS PROVIDE EXAMPLES OF DOCUMENTS ADDRESSING TESTING AT "OTHER SITES" OR OLDER TYPES:

1. RADIOLOGICAL (RADIO$) + PANAMA - 1
2. " " + ALASKA - 4
3. " " + MARYLAND - 30
4. " " + MINNESOTA - 0
5. " " + FLORIDA - 2
6. " " + CHEMICAL WARFARE SERVICE - 0

7. BIOLOGICAL (BIOL$) + PANAMA - 1
8. " " + ALASKA - 1
9. " " + FLORIDA - 0
10. " " + MARYLAND - 12
11. " " + CHEMICAL WARFARE SERVICE - 1

12. CHEMICAL (CHEM$) + PANAMA - 11
13. " " + ALASKA - 51
14. " " + MARYLAND - 243
15. " " + CHEMICAL WARFARE SERVICE - 4

D. OF THE TOTALS IN PARA A, THE FOLLOWING NUMBERS PROVIDE EXAMPLES OF DOCUMENTS WHICH WERE CO-PUBLISHED BY THE U.S. AND INTERNATIONAL PARTNERS (I.E. CANADA, UK, TRIPARTITE):

1. RADIOLOGICAL (RADIO$) + CANADA - 117
2. " " + UK - 59
3. " " + TRIPARTITE - 106

4. BIOLOGICAL (BIOL$) + CANADA - 37
5. " " + UK - 17
6. " " + TRIPARTITE - 13

7. CHEMICAL (CHEM$) + CANADA - 722
8. " " + UK - 220
9. " " + TRIPARTITE - 355

DATABASE USED: BRS 4.2

NUMBER OF CLASSIFIED BY BRS CATEGORY:

@ACCN 8121 DOCUMENTS
@AD 3614 "
@DATE 9310 "
@DBDT 9308 "
@DOCN 9310 "
@FICH 1899 "
@HARD 8317 "
@PAGE 8502 "

UNCLASSIFIED DOCUMENTS - TECHNICAL INFORMATION CENTER
25 OCTOBER 1994

A. IN GENERAL TERMS; HARDCOPY AND FICHE:

1. RADIOLOGICAL (RADIO$) - 1838

2. NUCLEAR (NUCL$) - 2094

3. BIOLOGICAL (BIOL$) - 12513

4. CHEMICAL (CHEM$) - 16008

32453

Remaining UNCLASSIFIED documents (26398) pertain to other topics, such as smoke/obscurants, meteorology, etc.
TOTAL UNCLASSIFIED: 32453 + 26398 = 58851

B. OF THE ABOVE TOTALS, THE FOLLOWING NUMBERS PERTAIN TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY):

1. RADIOLOGICAL (RADIO$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 197

2. NUCLEAR (NUCL$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 191

3. BIOLOGICAL (BIOL$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 4,061

4. CHEMICAL (CHEM$), PERTAINING TO DUGWAY PROVING GROUND OR DESERET TEST CENTER (PERFORMED AT, OR SPONSORED BY): 3,155

C. OF THE TOTALS IN PARA A, THE FOLLOWING NUMBERS PROVIDE EXAMPLES OF DOCUMENTS ADDRESSING TESTING AT "OTHER SITES" OR OLDER TYPES:

1. RADIOLOGICAL (RADIO$) + PANAMA - 30
2. " " + ALASKA - 11
3. " " + MARYLAND - 30
4. " " + MINNESOTA - 6
5. " " + FLORIDA - 12
6. " " + CHEMICAL WARFARE SERVICE - 10

7. BIOLOGICAL (BIOL$) + PANAMA - 158
8. " " + ALASKA - 48
9. " " + FLORIDA - 91
10. " " + MARYLAND - 210
11. " " + CHEMICAL WARFARE SERVICE - 12

12. CHEMICAL (CHEM$) + PANAMA - 305
13. " " + ALASKA - 104
14. " " + MARYLAND - 562
15. " " + CHEMICAL WARFARE SERVICE - 331

D. OF THE TOTALS IN PARA A, THE FOLLOWING NUMBERS PROVIDE EXAMPLES OF DOCUMENTS WHICH WERE CO-PUBLISHED BY THE U.S. AND INTERNATIONAL PARTNERS (I.E. CANADA, UK, TRIPARTITE):

1. RADIOLOGICAL (RADIO$) + CANADA - 33
2. " " + UK - 4
3. " " + TRIPARTITE - 10

4. BIOLOGICAL (BIOL$) + CANADA - 174
5. " " + UK - 19
6. " " + TRIPARTITE - 17

7. CHEMICAL (CHEM$) + CANADA - 290
8. " " + UK - 55
9. " " + TRIPARTITE - 28

DATABASE USED: BRS VERSION 6.0

Senator John Glenn

News Release

For Immediate Release:
December 15, 1993

Contacts: Jack Sparks (202) 224-5635
Len Weiss (202) 224-4751

GLENN: GOVERNMENT CONDUCTED PLANNED RADIATION RELEASES

Senator Issues Report On 12 Previously Unknown
Radiation Tests In The 1940's and 1950's

Washington, DC -- Senator John Glenn (D-Ohio) today called on the Departments of Energy and Defense to make public all pertinent information on the planned releases of radiation. Glenn made his request as he released the results of an independent investigation, conducted by the General Accounting Office (GAO), detailing 12 previously unknown planned releases of radiation into the environment by the government during the 1940's and 1950's.

Glenn, Chairman of the Governmental Affairs Committee, today forwarded the GAO study to Energy Secretary Hazel O'Leary and Defense Secretary Les Aspin. Copies of the report and Glenn's letter to Secretary O'Leary and Secretary Aspin are available in Room 340 of the Dirksen Senate Office Building.

"On December 2-3, 1949, the government conducted the infamous Green Run experiment at Hanford," Glenn said. *"During Green Run, Hanford officials deliberately released large amounts of radiation into the atmosphere so the military could track how this radiation moved. However, it wasn't until 1989 that residents in Washington State and Oregon became aware of this test, which spread radiation for some 200 miles."*

"The report I am releasing today shows that Green Run was not an isolated incident. In studying the affects of the Hanford test, the GAO uncovered 12 other planned radiation releases which occurred at three sites in the late 1940's and early 1950's."

"Today I am calling on the Department of Energy to make good on its new openness pledge and release all pertinent data on these 12 tests, and any others that have occurred over the years. I am also making a similar request of the Department of Defense, which helped conduct these experiments, and may posess pertinent documentation."

"It is important to make sure that people know what happened 40-years ago. The government owes its citizens at least that much."

Glenn said the report details 12 planned radioactive releases conducted at: Oak Ridge, Tennessee; Los Alamos, New Mexico; and, Dugway, Utah. Similar to the Green Run test, none of the 12 releases were accidental and none were the result of routine plant operations. Eight of the tests were part of the U.S. radiation warfare program and four

(more)

environment. However, I believe it is incumbent upon the Department and Congress to review all relevant information in order to make these determinations.

I am asking the GAO to continue their investigation concerning all planned releases of radiation by agencies of the U.S. government. I am sure that you will do everything in your power to ensure that GAO has the full cooperation of DOE employees. I encourage you to make the review and declassification of documents regarding planned radiation release a top priority as you continue your openness initiative. Further, I would appreciate your efforts to keep my staff and I informed on the progress of this work.

As many of these planned releases were conducted jointly with the U.S. military, I am forwarding a copy of this Fact Sheet to Secretary Aspin. I will encourage him to take similar actions.

Once again, I appreciate your leadership in slaying many of these Cold War demons, and I look forward to working closely with you.

Best regards.

Sincerely,

Best regards— John Glenn

John Glenn
Chairman

JHG/ck
enclosure

United States Senate

COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

December 14, 1993

The Honorable Les Aspin
Secretary
U.S. Department of Defense
Washington, DC 20301

Dear Mr. Secretary:

In an effort to better understand the health, safety, and environmental implications of an atmospheric radioactivity-monitor test called the Green Run, conducted at the Hanford Reservation in 1949, I asked the General Accounting Office to review relevant documents of both the Department of Defense and the Department of Energy. During the course of its investigation, the GAO uncovered references to 12 additional planned radiation releases at 3 other government facilities. Similar to the Green Run test, none of the 12 releases were accidental and none were the result of routine plant operations. Eight of the tests were part of the U.S. radiation warfare program and four were related to atmospheric radiation tracking research.

I am forwarding to you the GAO Fact Sheet, Nuclear Health and Safety: Examples of Post World War II Radiation Releases at U.S. Nuclear Sites, which summarizes their findings. I would like your comments on the report, and I ask for your assistance and full cooperation in declassifying and releasing all relevant information about these and any other planned radiation releases conducted by the Department.

Two of the releases related to the radiation warfare program were conducted at the government's Oak Ridge, Tennessee facility; six were conducted at the U.S. Army's Dugway, Utah site. These tests were conducted between 1948-1952. The four tests related to atmospheric radiation tracking occurred at the government's Los Alamos, New Mexico facility during 1950.

In some cases, GAO was unable to uncover much specific information about the radiation releases. Therefore, I do not believe that it is currently possible to determine whether civilians or workers were unwittingly exposed to health-damaging doses of radiation, or if there was significant impact on the

environment. However, I believe it is incumbent upon the Department and Congress to review all relevant information in order to make these determinations.

I am asking the GAO to continue their investigation concerning all planned releases of radiation by agencies of the U.S. government. I am sure that you will do everything in your power to ensure that GAO has the full cooperation of DOD employees. I encourage you to make the review and declassification of documents regarding planned radiation releases a top priority as we work together to fully understand the full impact of the Cold War. Further, I would appreciate your efforts to keep my staff and I informed on the progress of this work.

As these planned releases were conducted jointly with the Atomic Energy Commission, I am forwarding a copy of this Fact Sheet to Secretary O'Leary. I am encouraging her to make this effort a top priority in DOE's ongoing "openness initiative."

Once again, I appreciate your leadership in slaying many of these Cold War demons, and I look forward to working closely with you.

Best regards.

Sincerely,

Best regards— John Glenn

John Glenn
Chairman

JHG/ck

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-253483

November 24, 1993

The Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate

Dear Mr. Chairman:

In response to your request, this fact sheet provides information on several planned radioactive releases that were conducted at U.S. nuclear sites in the post World War II years, including a release at Hanford, Washington, in December 1949. The Hanford event, referred to as the Green Run test, has been the subject of public attention in the Pacific Northwest since the late 1980s. Public concern has been heightened by the longtime secrecy surrounding the event and the fact that some test details still remain classified. As agreed with your office, we are presenting information on (1) the Green Run test and (2) several other tests at U.S. sites in the late 1940s and early 1950s that involved radioactive releases.[1]

In summary, the Green Run test was an atmospheric radioactivity-monitoring experiment conducted by the military and the former Atomic Energy Commission (AEC). A premise of the test was that aerial monitoring and sampling of a radioactive cloud, even far from the source, could give evidence of nuclear materials. Conducted on December 2-3, 1949, the test released a recorded total of almost 28,000 curies of radioactive material from a special spent fuel reprocessing operation into the atmosphere over southeast Washington and Oregon.[2] (See fig. 1.1.)

For the test, some of the plant's usual radiation safety procedures were intentionally relaxed, resulting in a larger than normal radioactive release. Test participants did not consider the test to be unsafe at the time, and the radiation doses that the off-site populace might have received as a result of the test were not estimated at the time (based on the historical test documentation available to us). However, according to the AEC, in some locations, the release exceeded then-existing local Hanford limits for deposition in vegetation and animal tissue, and it may not have been permissible under today's more stringent safety standards for U.S. nuclear sites. Presently, to better understand the health effects of the test and

[1]An identically titled classified version of this fact sheet (C-GAO/RCED-93-1FS) was issued to you on June 30, 1993.

[2]A curie is a basic unit of radioactivity that is equal to 3.7×10^{10} radioactive disintegrations per second.

other Hanford iodine releases during the middle to late 1940s, a study of historical Hanford doses is under way, directed by the Centers for Disease Control.

In addition, we documented 12 other planned radioactive releases that occurred at three U.S. nuclear sites during 1948-52. These releases, or tests, were part of the U.S. nuclear weapons research and development effort, and they were conducted by the military and the AEC. The releases were of two types, radiation warfare tests[3] and atmospheric radiation-tracking tests. The radiation warfare tests were conducted at the AEC's Oak Ridge, Tennessee, site and the military's Dugway, Utah, site in order to develop an air-dropped radioactive munition. The atmospheric radiation-tracking tests were conducted at the AEC's Los Alamos, New Mexico, site in order to analyze the diffusion of radioactive gases and fallout effects. Two of the Los Alamos tests—conducted in 1950, involving unspecified kilocurie amounts—resulted in the detection of atmospheric radiation off-site over populated areas. We found no documentation of potential health effects from these tests.

To develop this fact sheet, we used diverse sources of information because of the lack of complete, definitive government records on radiation releases at nuclear sites. As a result, our results are based on—and limited to—available information drawn from government and private archives, agencies' files, and interviews with knowledgeable individuals. Other releases not documented in this fact sheet may have occurred at U.S. nuclear sites in the post World War II years.

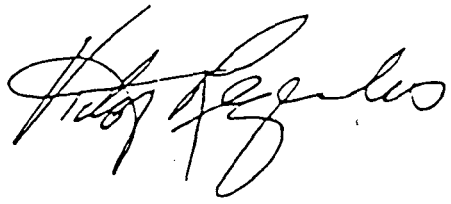
We discussed information in this fact sheet with officials of the Department of Energy's Divisions of History and Air, Water, and Radiation, who generally agreed with the facts as presented. On the basis of their suggestions, minor technical changes were made where appropriate. However, as requested, we did not obtain written agency comments on this fact sheet.

As arranged with your office, unless you publicly release its contents earlier, we plan no further distribution of this fact sheet until 30 days after the date of this letter. At that time, we will send copies of this fact sheet to the Secretaries of Defense and Energy. We will make copies available to others on request.

[3]The term radiation warfare has different meanings, but in this fact sheet it refers to the use of non-bomb radioactive agents for offensive military purposes.

Please call me at (202) 512-3841 if you or your staff have any questions. Major contributors to this fact sheet are listed in appendix II.

Sincerely yours,



Victor S. Rezendes
Director, Energy and Science Issues

Contents

Abbreviations

AEC	Atomic Energy Commission
DOE	Department of Energy

The Green Run Test and Its Safety and Health Implications

Details of the Green Run test and its historical context indicate that it was an atomic energy intelligence collection experiment. The test occurred during a period of heightened interest in Soviet nuclear capabilities, shortly after the first Soviet nuclear bomb detonation. The test was not considered unsafe at the time, when radiation protection standards were generally less stringent than they are today. However, at some locations, the release exceeded then-existing local Hanford, Washington, tolerances for deposition in vegetation and animal tissue, and it may not have been permissible under today's nuclear safety standards. Presently, potential health effects from the test and other iodine releases at Hanford during the 1940s are being addressed in an ongoing dose reconstruction study.

A classified report on the test was issued in May 1950 by the former Atomic Energy Commission (AEC), but the report remained classified in its entirety—and the test remained undisclosed—for almost four decades. Details of the test and concerns about its potential health and safety effects first surfaced in the latter part of the 1980s. When references to the test appeared in other AEC documents that were declassified over the years, several Green Run-related Freedom of Information Act requests and appeals were filed. As a result, the test report was largely declassified in 1989. (Several passages in the report remain classified by determination of the Air Force, on the basis that further declassification of the report could compromise Air Force missions and thereby damage the national security.)

Test Purpose and Historical Context

The Green Run test was a special test of detectability as well as a research experiment into the atmospheric diffusion of radioactive gases. As such, it was related to postwar classified AEC/military research into the nature and effects of radioactive fallout and bomb debris.

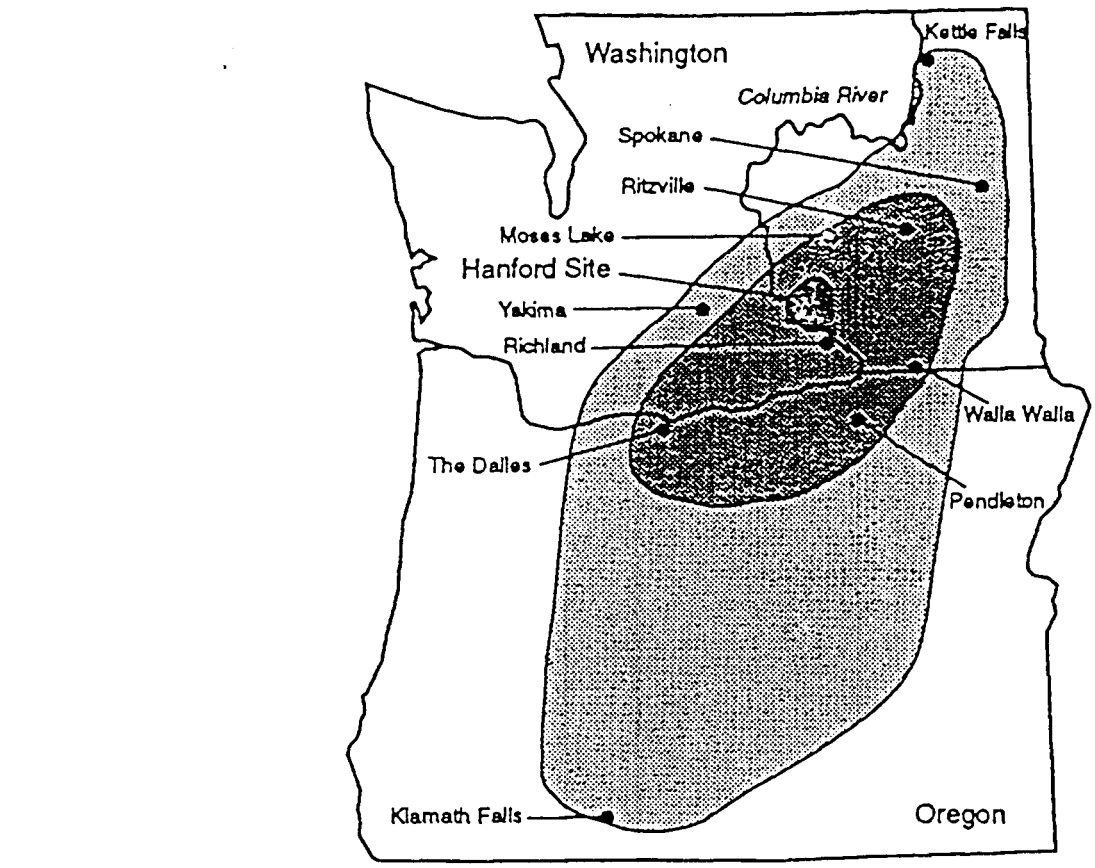
Test Purpose

The Green Run test was conducted at Hanford, Washington, on December 2-3, 1949, by the AEC and the Air Force. The test took place in a postwar climate of U.S. concern about Soviet nuclear capabilities following the first detected explosion of a Soviet nuclear weapon in August 1949. According to a test participant, a premise of the test was that aerial monitoring and sampling of a radioactive cloud, even long distances from the source, could give evidence of nuclear materials. The diffusion of the released gases was to be monitored in order to develop air, ground, and aquatic methods of collecting data on nuclear operations and weapons

tests. The radioactive cloud was generated by a special spent fuel reprocessing operation.

For the test, the plant's radiation emission control procedures were intentionally relaxed. The spent fuel used in the test was aged about 16 days instead of the usual longer period of up to 90 or more days, which accounts for the term "green" run (i.e., the test involved the reprocessing of "green" fuel). In addition, the plant's off-gas water scrubbers—used to minimize the release of radioactive off-gases from the stack—were not operated. According to the test report issued in May 1950, as a result of these steps, the test released about 27,800 curies of radioactive production off-gases, including about 7,800 curies of iodine and about 20,000 curies of less hazardous xenon, into the atmosphere in southeast Washington and Oregon. The total recorded iodine release was about twice the almost 4,000 curies predicted in pretest calculations. During the test, despite unexpected adverse weather patterns that developed and limited the range of diffusion, the radioactive cloud was detected by an aircraft over 100 miles northeast of the site. After the test, radioactive iodine was found on vegetation over large areas of southeast Washington and Oregon, as shown in figure 1.1.

Figure 1.1: Areas Where Radioactive Iodine Was Found on Vegetation Following the Green Run Test



Source: Hanford Environmental Dose Reconstruction Project Fact Sheet, Mar. 1992.

Historical Context

As a research experiment into atmospheric diffusion, the test was related to postwar classified AEC/military research into the nature and effects of radioactive fallout and bomb debris. Such research began as early as the Operation Crossroads test series in the Pacific Ocean in 1946—during which, fallout was monitored aerially by the Air Force and on the surface by naval vessels—and continued throughout succeeding

atmospheric-testing series. Effective instrumentation was an important aspect of research into radioactive effects, and at the time of the Green Run event the AEC and the military services were conducting several field instrument development programs to support their nuclear weapons research efforts. According to a test participant, the test was also generall related to research into the safety and health effects of nuclear detonations and nuclear production operations.

The Green Run test was preceded by other aerial radiation-monitoring tests that involved routine production releases of radioactive materials. The test was a follow-up to a series of aerial-monitoring tests conducted by the Air Force and the AEC during November 1948 to March 1949 at Oak Ridge, Tennessee, and at Hanford. For these tests, no special releases were conducted. The tests involved monitoring off-gases from routine production operations. At Oak Ridge, during 20 overflights by a C-47 aircraft between November 1948 and February 1949, reactor and separations off-gases were tracked up to 17 miles downwind. At Hanford in March, during three similar overflights, routine separations off-gases (with stack scrubbers in operation) were detectable for less than 2 miles—results considered so disappointing that further Hanford overflights were discontinued. In a report on the test series, the authors concluded that further use of similar Hanford operations as a source for aerial tracking was not practicable. Logically, the Green Run test—with Hanford scrubbers not operating—provided the needed stronger source.[1]

In addition, according to a former AEC official, monitoring overflights for the purpose of cloud tracking were conducted wherever sources of atmospheric radiation could be found in the United States, and probably at most or all AEC nuclear production sites. Routine close-in monitoring overflights at AEC sites began in the early 1950s and developed into a regular monitoring program having, among other things, environmental, safety, and security and safeguards purposes. Also, aerial radiation monitoring by Air Force aircraft was practiced in conjunction with the many nuclear bomb tests conducted at the Nevada Test Site and in the Pacific Ocean during the late 1940s and throughout the 1950s. For example, according to one source, during Operation Sandstone in the Pacific in April-May 1948, a fallout-tracking test called Operation

[1]Also in 1949, at an undetermined time before July 28, aerial monitoring tests of routine production effluents were conducted at the Harshaw Uranium Refining Plant in Cleveland, Ohio. Overflights detected particles, likely uranyl fluoride, 1,150 yards downwind from the source in concentrations of 0.71 micrograms per cubic meter. Also in 1949, on an undetermined date, aerial effluent monitoring of the Mallinckrodt Uranium Refining Plant in St. Louis, Missouri, detected uranium concentrations of 0.4 micrograms per cubic meter in the atmosphere 3,000 feet downwind from the plant.

Fitzwilliam monitored radioactive fallout gases for several thousand miles at levels many times above background levels.

Safety and Health Implications

Some routine Hanford radiation safety procedures were intentionally relaxed for test purposes. Specifically, in order to calibrate means of detecting Soviet production from Hanford plant operations, the cooling period for Hanford spent fuel was shortened from 90 or more days to only 16 days to simulate presumably less efficient or careful Soviet operations, and separations off-gas scrubbers were not operated. Furthermore, while the release was conducted on a weekend, which may have limited the number of workers on-site, the off-site populace was not forewarned of the event or made aware of it for several decades.

The test was also conducted despite less-than-optimal weather conditions, which limited the test results and may have exposed greater-than-expected numbers of the population to the radioactive cloud. Prevailing wind patterns prior to the test had been inopportune, and wind shifts during the test caused the emission of gases close to the ground, including directional shifts over populated areas in southeast Washington and greater-than-expected deposition at the Hanford site. Because of shifting winds, long-distance tracking of the cloud for several hundred miles was not possible. Two AEC contractor officials responsible for conducting the test differ in their recall of who decided that the weather for the test was acceptable. According to one, AEC contractor officials judged the weather to be acceptable. According to the other, the AEC did not wish to proceed, but the Air Force made the decision to conduct the test.[2] The recorded total release of iodine 131—about 7,800 curies—was about 2 times the predicted quantity. However, the accuracy of the recorded amounts has been questioned, and they have been recalculated.[3]

According to officials conducting the test, the amount of the release was not considered unsafe at the time. While the release was extremely concentrated, since it occurred over a 12-hour period, regulatory limits on the amount of such emissions did not exist at the time. In fact, the release was a small fraction of the total releases that occurred during wartime and immediate postwar Hanford operations, before radioactive iodine removal

[2]The AEC's Hanford contractor, General Electric Company, had a Health Instruments Division with the day-to-day authority to decide when reactor fuel could be processed.

[3]In June 1992, in the journal Health Physics, Maurice Robkin, a participant in the Hanford Dose Reconstruction Project, estimated the amount of iodine released to be about 11,000 curies, well over twice the predicted quantity. He calculated the release of xenon to be about 16,000 curies, for a total of about 27,000 curies.

systems were installed. For example, during 1945, production releases estimated at over 45,000 curies of iodine per month occurred at Hanford. By one estimate, the Green Run test accounted for about 1.1 percent of the total radioactive iodine released during 1944-49.

Test participants said the release was considered to be well within the standards of the time for human exposure to radiation.[4] In some locations, the release reportedly exceeded then-existing local Hanford limits for radioactive deposition in animal tissue and vegetation. According to the test report, the release resulted in iodine deposition in animal thyroids up to 80 times above the limit of 4 microcuries per kilogram of tissue. The then-existing local Hanford tolerance for continuous deposition on vegetation—9 microcuries per kilogram—was temporarily exceeded in the areas of Yakima, The Dalles, Spokane, and Blue Mountains. Based on post-test documentation available to us, radiation doses that the off-site population might have received as a result of the test were not estimated at the time.

In regard to today's more stringent radiation standards, which are not directly comparable to those of the 1940s, it has not been determined whether the test exceeded present limits for off-site radiation doses and emissions.[5] The effects of the Green Run release and other postwar Hanford radioactive iodine releases that may have had effects on the off-site population are being addressed in an ongoing dose reconstruction study, directed by the Centers for Disease Control, focusing on Hanford operations and releases from the site's beginning in 1944.[6] In regard to deposition standards that exist today, post-test deposition on vegetation in Richland, Walla Walla, and Pendleton reached levels above the threshold of 50 picocuries per gram listed in recent Environmental Protection Agency guidance for the interdiction of foodstuffs, applicable to accidents

[4]At about the time of the test, the National Committee on Radiation Protection—whose recommendations the AEC followed—recommended (but did not immediately publish) a public external dose limit corresponding to about 1.5 rem (roentgen equivalent man) annually, or 10 percent of its recommended worker limit of about 15 rem annually. We were unable to document a then-existing specific limit for internal radioactive iodine doses. Rem is a measure of the dose of any ionizing radiation to body tissues in terms of its estimated biological effect relative to a dose of 1 roentgen of X-rays.

[5]Per 40 C.F.R. 61.92, applicable to the Department of Energy under departmental order 5400.5, air pathway radiation doses to the off-site populace are limited to 0.01 rem annually.

[6]Preliminary dose estimates from the study indicate that, during 1945-47, when routine Hanford iodine releases were conducted that totaled up to several dozen times more than the Green Run release, doses exceeding present limits may have been received by downwind infants through the air-pasture-cow-milk-thyroid pathway. According to DOE, at the time, scientists had not identified this as a pathway for significant doses of radioactive iodine to individuals.

or other mishaps at both /civilian and Department of Energy (DOE) nuclear plants.[7]

Furthermore, if proposed today, the test (including procedures that intentionally increased the amount of the release) might not be permissible under the principle of limiting radiation effects from nuclear production operations to levels "as low as reasonably achievable" (10 C.F.R. 20.1, and DOE Order 5400.5). This principle was not operative in 1949, at the time of the Green Run test. In addition, if proposed today, such a test would appear to be imprudent from the point of view of operational safety procedures. DOE has categorized the test as one of the 14 most significant safety-related incidents in Hanford's history.

Our work did not document that the test was intended to be a radiation warfare experiment or a field test of radiobiological effects on humans. In particular, we examined still-classified passages in the Green Run test report and found that they did not refer to any such intentions or operations.

[7]EPA Manual For Protective Actions for Nuclear Incidents, No. 520/1-75-001-A, Jan. 1990.

Details of Other Releases

In addition to the Green Run test, we documented 12 other planned radioactive releases that occurred during post World War II nuclear weapons-related tests conducted at three U.S. sites: Oak Ridge, Tennessee, Los Alamos, New Mexico, and Dugway, Utah. Eight of the releases were conducted as part of the U.S. radiation warfare program. Four others were related to atmospheric radiation-tracking research. Like the Green Run test, none of these releases were accidental, and none resulted from routine production operations at nuclear sites.[1]

Releases During the Radiation Warfare Program, 1948-52

We documented eight planned radiation releases conducted during the postwar U.S. radiation warfare program. Two of these releases occurred at the AEC's Oak Ridge site, and six others at the U.S. Army's Dugway, Utah, test site. The releases were conducted as part of a research program conducted by a joint AEC-military panel on radiation warfare. Specific program participants (and roles) included the AEC (study and production of radioactive sources, study of biomedical effects), top military leadership (dissemination methods and protection measures), the Armed Forces Special Weapons Project (coordination and evaluation of the program), the Air Force (aerial delivery of device), and the Army (design, selection, testing of tactical device). Field testing of a radiation warfare device continued through at least 1952, as discussed below. The program appears to have ended in 1954 because it was not considered a high military priority.

Early on, the limitations of the concept of an offensive radiation warfare device were seen. For example, problems were seen related to preparing sufficient quantities of a suitable radioisotope for use in an offensive device. In some respects, chemical and biological weapons were perceived to be potentially as effective as a radioactive device, and logistically more convenient. During the program, the idea of using an air-dropped, cluster-type radiation warfare munition for tactical area exclusion (up to 25 square miles) was pursued, with the Army being the principal proponent.

Concurrently in the early 1950s, another logistically simpler kind of radiation warfare was foreseen. There was growing knowledge of fallout effects from so-called "dirty" atomic bombs, which advanced their potential for area exclusion and further limited the perceived need for a

[1]These events were classified at the time of their occurrence over four decades ago. We were unable to document some event details, including in some cases the radionuclide involved and the extent of atmospheric diffusion during the release.

non-bomb radiation warfare device.[2] Such "dirty" fallout effects were first witnessed at an underwater detonation during Operation Crossroads in 1946, and they were further studied through surface and cratering tests at the Nevada Test Site. For example, November 1951 ground-level detonations in the Buster-Jangle test series were conducted in Nevada to determine the military effects of atomic blasts. The enormous potential of "dirty" fallout came to be recognized after the Bravo detonation in the Operation Castle test series in the Pacific in 1954.

Oak Ridge Releases

In 1948, as directed by a newly formed AEC-military joint panel on radiation warfare, two radiation warfare field experiments were conducted by the AEC's Oak Ridge office. Both tests involved gamma radiation released from non-bomb point sources at or near ground level. The first test, on or before July 23, 1948, concerned the effectiveness of scattered radiation from a single gamma-emitting source—metallic lanthanum. Oak Ridge was assigned to prepare the single source (1,000 curies in strength) and place it near the ground in a 700-yard-long field. Radiation readings were to be taken at several distances up to 1,000 feet from the source, and at 3-, 6-, and 12-foot altitudes. (We were unable to document specific test results.)

The second test was conducted on an undetermined date in July 1948 following the first test. The second test concerned the effectiveness of gamma-emitting sources distributed uniformly over an area. One thousand separate small sources were to be prepared, consisting of metallic tantalum rods or wires in suitable containers, each of a uniform strength of 300 curies (a total of 300 kilocuries for the test). The overall grid pattern area was to be 300 yards on a side or greater and was to be varied for different measurements. (We were unable to document specific test results.)

Dugway Releases

During 1949-52, the military conducted six tests of radiation warfare ballistic dispersal devices containing radioactive agents at the U.S. Army's Dugway, Utah, site. The principal agencies involved in the tests were the Army Chemical Corps, the AEC, and the Air Force. The tests were conducted concurrently with four series of non-radioactive drop tests over Great Salt Lake to test the dispersion of various types of spheres to be used in a cluster munition. The spheres for the drop tests carried

[2]According to a former Hanford official, "dirty" atomic bombs were exploded at or near the surface to propel large amounts of dust particles into the atmosphere.

fluorescein dyes whose patterns in the water were photographed and analyzed.

The first and second live tests were conducted on October 22 and November 30, 1949, and their specific purpose was to obtain information about the uniformity of ballistic dispersal from an air-dropped device over an approximately 1-square-mile area. For both tests, 300 curies of tantalum 182 particles were prepared by the AEC's Oak Ridge office. For the first test, the particles were charged to a strength of 260 curies, and for the second test, to 1,506 curies. The particles were loaded into a 2,000-pound cluster device for each test. The devices were dropped by the Air Force from an altitude of about 15,000 feet, bursting at about 1,300 feet, resulting in dispersal areas about 50 percent greater than anticipated. For the first test, a 0.6-square-mile area was covered, with annular (circular) effects noted. The mean radius of contamination was 500 yards, with the main area of contamination being within a circle 200 yards in diameter. For the second test, contamination covered a 0.8-square-mile area, with a less pronounced annular effect because some of the tantalum particles were smaller than those used in the first test.

Four additional test events were conducted during 1950-52, for which detailed documentation is unavailable:[3]

- During September 1950, two tests of a 2,000-pound ballistic dispersal device were conducted.
- In November 1951, an undetermined number of drop tests from various altitudes were conducted using spheres filled with a radioactive agent with various physical characteristics.
- In May 1952, a further series of drop tests was conducted.

[3]We were unable to document other details of these tests, including the specific radioactive agent used. However, by 1952, the radiation warfare program had turned from tantalum and protactinium to zirconium-niobium as the radioactive agent under primary consideration. In addition, the program in 1952 projected a single-aircraft delivery capability of up to 15 megacuries, dispersed over 3 to 4 square miles, or 10 square miles using four aircraft.

The 1951 and 1952 tests resulted in primary radioactive patterns 250 yards in diameter, with contamination well beyond this distance. The series were conducted during periods of calm winds.[4]

In conjunction with radiation warfare tests at Dugway, monitoring instruments easily detected a ground tantalum source of a few thousand curies at an altitude of 6,000 feet. We found no documentation of whether the Dugway releases were detected off-site.

Releases During Atmospheric Radiation- Tracking Tests at Los Alamos, 1950

We documented a total of four atmospheric tracking tests conducted in 1950 at Los Alamos. In March and April of that year, the Air Force Laboratory, Cambridge, Massachusetts, and Los Alamos Laboratory exploded three simulated nuclear devices at the Los Alamos site, resulting in atmospheric fallout. The purposes of the detonations were to (1) study implosion dynamics and track a radioactively gaseous cloud as long as possible, (2) study the rate at which the ionization produced by the radioactive matter decreased and diffused, and (3) analyze the fallout of radioactive material from the cloud. The tests were conducted on March 24 and 29, and April 6, involving small simulated bombs containing unstated types and amounts of nuclear materials, presumably radioactive lanthanum 140 in kilocurie amounts. Resulting radioactive clouds were tracked downwind by a B-17 aircraft carrying an experimental ionization-measuring apparatus. On July 19, another radiation detection test was conducted near Los Alamos using an unidentified 400-curie radioactive source. The source was detected overhead and a few miles distant.

Fallout from the March 24 and April 6 tests went off-site over sparsely populated areas. The cloud from the March 24 test was tracked as far as the small town of Watrous, New Mexico, about 70 miles east of Los Alamos. The cloud from the March 29 test was tracked westward for an unstated distance. Information was not available concerning whether it went off-site. The cloud from the April 6 test was tracked northward for

[4]We also documented plans for two further tests (though we could not document that the events occurred) as follows: Mass drops of spheres containing a radioactive agent were planned for October-November 1952. Two clusters of 263 spheres each (each sphere containing 0.8 pounds of tantalum oxide pellets at a strength of 15 curies per pound, for a total of about 6,300 curies in the clusters) were to be prepared at Oak Ridge for air drops together from 30,000 feet. Another mass drop was planned for 1953, upon completion of an integrated munition system with ground-handling equipment at Dugway. For the test, six clusters of 263 spheres each were to be dropped, with planned centers of impact of the sphere groups to be 500 to 750 yards apart. Each sphere was to contain 0.8 pounds of tantalum oxide, at a strength of 75 curies per pound (about 95,000 total curies).

about 10 miles. Information was not available concerning whether the radiation from the July 19 test was detected off-site. We found no documentation of potential health effects from the four tests.

Objectives, Scope, and Methodology

As requested by the Chairman, Senate Committee on Governmental Affairs, we developed information on (1) the Green Run test, including test details and potential health effects, and on (2) several other tests at U.S. nuclear sites in the late 1940s and early 1950s that involved radioactive releases. We focused on releases related to special tests conducted at nuclear sites rather than on accidental releases or routine, continuous releases related to sites' ongoing nuclear production operations. In addition, our scope did not include nuclear bomb detonations—hundreds of which were conducted in Nevada and in the Pacific Ocean during the 1950s and 1960s.

Our scope and methodology included interviewing knowledgeable sources and examining pertinent unclassified and classified documents. We interviewed active and former Department of Energy (DOE), Atomic Energy Commission (AEC), and Department of Defense personnel as well as nongovernment sources with knowledge of matters related to the request, including several Green Run test participants. We examined documents in DOE, Air Force, and Defense Nuclear Agency archives, as well as the National Archives and archives of the Massachusetts Institute of Technology. Our results are based on diverse sources of information and are limited by their dependence on necessarily selective records examinations, owing to a lack of complete, definitive AEC or U.S. military documentation of the radiation events that occurred at U.S. nuclear sites in the postwar years. As a result, other planned radioactive releases not documented in this fact sheet may have occurred at AEC and other U.S. nuclear sites during those years.

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SUBJECT: RECORD AND RADIATION TESTING
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PASS TO OCS INFORMATION MANAGEMENT
SUBJECT: RECORDS AND RADIATION TESTING
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B. DACS-ZA MSG DTD 2Ø2322Z JAN 94, SAB
1. REFERENCE A IMPOSED A MORATORIUM ON DESTRUCTION OF RECORDS RELATING TO THE TESTING OF IONIZING RADIATION ON HUMANS. REFERENCE B DIRECTED THE SEARCH OF ALL RECORDS REPOSITORIES, ARCHIVES, FILES, ETC FOR ANY RECORDS CONTAINING THE INTENTIONAL EXPOSURE OF HUMANS TO IONIZING RADIATION AND DEFINED SPECIFIC REPORTING REQUIREMENTS, INCLUDING THE REQUIREMENT FOR A WEEKLY REPORT. THIS MESSAGE PROVIDES FURTHER DETAILED GUIDANCE BASED UPON DOD DIRECTION. FOLLOWING IS THE FULL TEXT OF THE DIRECTIONS.
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SPECIFIC DIRECTION FOR LOCATING RECORDS
OF DOD HUMAN RADIATION EXPERIMENTS
A. SCOPE OF RECORDS SEARCH.
1. DEFINITION OF "HUMAN RADIATION EXPERIMENTS".
THE INTERAGENCY WORKING GROUP HAS ADOPTED THE FOLLOWING DEFINITION OF "HUMAN RADIATION EXPERIMENTS:
(1) EXPERIMENTS ON INDIVIDUALS INVOLVING INTENTIONAL EXPOSURE TO IONIZING RADIATION. THIS CATEGORY DOES NOT INCLUDE COMMON AND ROUTINE CLINICAL PRACTICES, SUCH AS ESTABLISHED DIAGNOSIS AND TREATMENT METHODS, INVOLVING INCIDENTAL EXPOSURES TO IONIZING RADIATION.
(2) EXPERIMENTS INVOLVING INTENTIONAL ENVIRONMENTAL RELEASES OF RADIATION THAT (A) WERE DESIGNED TO TEST HUMAN HEALTH EFFECTS OF IONIZING RADIATION; OR (B) WERE DESIGNED TO TEST THE EXTENT OF

HUMAN EXPOSURE TO IONIZING RADIATION.

2. OTHER SPECIFIC EXPERIMENTS.

THE INTERAGENCY WORKING GROUP HAS ALSO IDENTIFIED SEVERAL SPECIFIC EXPERIMENTS FOR INCLUSION WITHIN THE SCOPE OF THE RECORDS SEARCH. THEY ARE:

(1) THE EXPERIMENT INTO THE ATMOSPHERIC DIFFUSION OF

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RADIOACTIVE GASES AND TEST OF DETECTABILITY, COMMONLY REFERRED TO AS "THE GREEN RUN TEST," BY THE FORMER ATOMIC ENERGY COMMISSION (AEC) AND THE AIR FORCE IN DECEMBER 1949 IN HANFORD, WASHINGTON;

(2) TWO RADIATION WARFARE FIELD EXPERIMENTS CONDUCTED AT THE AEC'S OAK RIDGE OFFICE IN 1948 INVOLVING GAMMA RADIATION RELEASED FROM NON-BOMB POINT SOURCES AT OR NEAR GROUND LEVEL;

(3) SIX TESTS CONDUCTED DURING 1949-1952 OF RADIATION WARFARE BALLISTIC DISPERSAL DEVICES CONTAINING RADIOACTIVE AGENTS AT THE U.S. ARMY'S DUGWAY, UTAH SITE;

(4) FOUR ATMOSPHERIC RADIATION TRACKING TESTS IN 1950 AT LOS ALAMOS, NEW MEXICO; AND

(5) ANY OTHER SIMILAR HUMAN RADIATION EXPERIMENTS THAT MAY LATER BE IDENTIFIED BY THE INTERAGENCY WORKING GROUP.

3. DATES OF EXPERIMENTS.

FOR PURPOSES OF THE IDENTIFICATION PROCESS, THE SCOPE OF THE SEARCH INCLUDES ALL HUMAN RADIATION EXPERIMENTS CONDUCTED FROM 1944 TO PRESENT. HOWEVER, EXPERIMENTS CONDUCTED AFTER MAY 20, 1974 (THE DATE OF ISSUANCE OF THE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE REGULATIONS FOR THE PROTECTION OF HUMAN SUBJECTS, 45 CFR PART 46), MUST BE CLEARLY IDENTIFIED AS HAVING OCCURRED AFTER

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THAT DATE. THIS IS BECAUSE RECORDS RETRIEVAL REQUIREMENTS WITH RESPECT TO EXPERIMENTS CONDUCTED AFTER MAY 20, 1974, WILL PROBABLY BE DIFFERENT THAN REQUIREMENTS REGARDING EXPERIMENTS FROM 1944 UNTIL MAY 20, 1974. THE DIFFERENCES IN REQUIREMENTS WILL BE EXPLAINED WHEN GUIDANCE ON RECORDS RETRIEVAL PROCEDURES IS PROVIDED.

4. RADIATION EXPOSURE FROM ATMOSPHERIC NUCLEAR TESTS AND HIROSHIMA AND NAGASAKI OCCUPATION EXCLUDED FROM SCOPE.

FORMER MILITARY PERSONNEL EXPOSED TO IONIZING RADIATION INCIDENT TO THE ATMOSPHERIC NUCLEAR TEST PROGRAM AND/OR THE OCCUPATION OF HIROSHIMA AND NAGASAKI ARE COVERED BY THE EXISTING NUCLEAR TEST PERSONNEL REVIEW (NTPR) PROGRAM AND BY EXISTING COMPENSATION MECHANISMS. THEY ARE NOT INCLUDED IN THE SCOPE OF THIS RECORDS IDENTIFICATION PROCESS.

B. <THIS PARAGRAPH NOT APPLICABLE>

C. IDENTIFICATION OF ORGANIZATIONS THAT MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS.

PART I OF THE REQUESTED REPORT REQUIRES THE IDENTIFICATION OF DOD ORGANIZATIONS THAT MIGHT HAVE CONDUCTED OR SPONSORED BY CONTRACT OR GRANT HUMAN RADIATION EXPERIMENTS. GUIDELINES FOR

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THIS TASK INCLUDE THE FOLLOWING.

1. INCLUDE PREDECESSOR ORGANIZATIONS. EACH ORGANIZATION IDENTIFIED AS ONE THAT MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS MUST CONSIDER, IF THE ORGANIZATION IS NEW SINCE 1944, THE ACTIVITIES OF ANY PREDECESSOR ORGANIZATION.

2. IDENTIFY ARCHIVE. EACH ORGANIZATION IDENTIFIED AS ONE THAT MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS MUST IDENTIFY ARCHIVES OR RECORDS CENTERS WHERE RECORDS OF SUCH EXPERIMENTS, IF CONDUCTED, MIGHT BE LOCATED. THIS MUST INCLUDE ANY ARCHIVES WHERE SUCH RECORDS OF ANY PREDECESSOR ORGANIZATIONS MIGHT BE LOCATED.

D. DOCUMENT SEARCH ACTIVITIES BY EACH ORGANIZATION THAT MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS

ALSO UNDER PART I OF THE REQUESTED REPORT, EACH ORGANIZATION IDENTIFIED AS ONE THAT MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS MUST, FOR ITSELF AND FOR ANY PREDECESSOR ORGANIZATION, DOCUMENT THAT IT ATTEMPTED TO DETERMINE WHETHER IT HAS CONDUCTED OR SPONSORED ANY SUCH EXPERIMENTS. SPECIFIC METHODS FOR SEARCHING MAY VARY BASED ON ORGANIZATION PRACTICES AND RECORDS SYSTEMS. METHODS MIGHT INCLUDE: SEARCH FOR ALL

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PUBLISHED AND UNPUBLISHED REPORTS OF RESEARCH FINDINGS; REVIEW OF THE ORGANIZATION'S CONTRACTS AND/OR GRANTS RECORDS; QUERIES TO CURRENT OR FORMER EMPLOYEES.WITH KNOWLEDGE OF HISTORICAL ACTIVITIES. EACH STEP OF THE PROCESS SHOULD BE DOCUMENTED AND DESCRIBED IN PART I OF THE ORGANIZATION'S REPORT. IN ADDITION, EACH ORGANIZATION MUST MAINTAIN A COMPLETE FILE OF ALL RELEVANT MEMORANDA, MEETING NOTES, ELECTRONIC MAIL MESSAGES, NOTES OF TELEPHONE CONVERSATIONS AND ALL OTHER MATERIALS THAT DOCUMENT THE SEARCH ACTIVITIES OF THE ORGANIZATION.
E. IDENTIFICATION OF EXPERIMENTS POSSIBLE WITHIN THE SCOPE OF THE SEARCH

AS DESCRIBED FURTHER BELOW, PART II OF THE REQUESTED REPORT IDENTIFIES SPECIFIC EXPERIMENTS POSSIBLY WITHIN THE SCOPE OF THE SEARCH AND BEGINS THE REPORTING OF KEY FACTS REGARDING THE EXPERIMENTS. GUIDELINES REGARDING THIS PART OF THE PROCESS FOLLOW.

1. ERR ON THE SIDE OF INCLUSION

FOR PURPOSES OF THIS INITIAL IDENTIFICATION OF POSSIBLE EXPERIMENTS, ORGANIZATIONS SUBMITTING REPORTS SHOULD ERR ON THE SIDE OF INCLUSION. REPORTED ACTIVITIES THAT ARE OUTSIDE THE

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SCOPE OF THE RECORDS SEARCH CAN THEN BE EXCLUDED PRIOR TO ACTUAL RECORDS RETRIEVAL. (KNOWLEDGE OF RELATED ACTIVITIES, ALTHOUGH OUTSIDE THE SCOPE. WILL HELP THE COMMAND CENTER DEAL WITH INQUIRIES EXPECTED FROM THE PUBLIC THROUGH THE ENERGY DEPARTMENT HOTLINE.)

2. EXPERIMENTS CONDUCTED OR SPONSORED BY A DOD ORGANIZATION.

EXPERIMENTS TO BE INCLUDED IN THE IDENTIFICATION PROCESS ARE ALL THOSE CONDUCTED BY A DOD ORGANIZATION, OR PREDECESSOR ORGANIZATION, OR SPONSORED IN WHOLE OR IN PART BY A DOD ORGANIZATION OR PREDECESSOR ORGANIZATION THROUGH A CONTRACT OR GRANT. FOR THIS PURPOSE, A "CONTRACT" SHOULD BE UNDERSTOOD AS INCLUDING ANY COOPERATIVE AGREEMENT, MEMORANDUM OF UNDERSTANDING, OR OTHER SIMILAR DOCUMENT ESTABLISHING AN AGREEMENT BETWEEN A DOD ORGANIZATION AND ANOTHER PARTY CONCERNING A HUMAN RADIATION

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EXPERIMENT.

3. IDENTIFY LEAD AGENCY WHERE MORE THAN ONE IS INVOLVED.

IN CASES IN WHICH MORE THAN ONE DOD ORGANIZATION WAS INVOLVED, OR AN AGENCY OUTSIDE DOD WAS INVOLVED, IT IS IMPORTANT TO IDENTIFY WHICH AGENCY SHOULD BE CONSIDERED THE LEAD AGENCY. THIS WILL HELP AVOID DUPLICATION OF EFFORT IN RECORDS RETRIEVAL ACTIVITIES. IF IT IS NOT CLEAR WHICH ORGANIZATION WAS THE LEAD AGENCY, RESPECTIVE ACTIVITIES OF THE INVOLVED AGENCIES SHOULD BE DESCRIBED SO THAT AN APPROPRIATE ASSIGNMENT OF LEAD RESPONSIBILITY FOR RECORDS RETRIEVAL ACTIVITIES CAN BE MADE.

F. IDENTIFICATION OF RECORDS REGARDING POSSIBLE HUMAN RADIATION EXPERIMENTS

PART II OF THE REQUESTED REPORT ALSO IDENTIFIES EXISTING RECORDS PERTAINING TO THE POSSIBLE HUMAN RADIATION EXPERIMENTS

THAT HAVE BEEN IDENTIFIED. GUIDELINES REGARDING THIS PART OF THE PROCESS FOLLOW.

1. DEFINITION OF "RECORDS".

"RECORDS" INCLUDES A WIDE RANGE OF MATERIALS, INCLUDING REPORTS, LETTERS, MEMORANDA, NOTES, DRAFTS, LOGS, HANDWRITTEN NOTES, WRITTEN PROCEDURES, MEDICAL RECORDS, AND ANY OTHER

WRITINGS AND DOCUMENTS, AS WELL AS PHOTOGRAPHS, CHARTS, DRAWINGS, MACHINE READABLE MATERIALS, VIDEO TAPE, AUDIO TAPE, COMPUTERIZED INFORMATION, AND ANY OTHER SOURCE OF PHYSICALLY RETRIEVABLE INFORMATION.

2. FOCUS ON EXISTING RECORDS

THE EFFORT TO LOCATE RECORDS IS RESTRICTED TO RECORDS THAT CURRENTLY EXIST. IN THE EVENT OF AN EXPERIMENT FOR WHICH SOME OR ALL RECORDS THAT MAY HAVE AT ONE TIME EXISTED CANNOT NOW BE FOUND, THE TASK OF LOCATING RECORDS DOES NOT REQUIRE AN EFFORT TO RECREATE RECORDS REGARDING INDIVIDUAL EXPERIMENTS. IF THERE IS A NEED TO RECONSTRUCT ADDITIONAL INFORMATION REGARDING PARTICULAR EXPERIMENTS, THAT WILL BE UNDERTAKEN SEPARATELY, PURSUANT TO INSTRUCTIONS GOVERNING SUCH A TASK.

3. PREPARE TO SUBMIT RECORDS.

PENDING FURTHER GUIDANCE ON RECORDS RETRIEVAL PROCEDURES, DOD ORGANIZATIONS SHOULD MAKE INITIAL PREPARATIONS FOR SUBMISSION OF DOCUMENTS TO A CENTRAL REPOSITORY. THESE INITIAL PREPARATIONS INCLUDE IDENTIFICATION OF ANY CLASSIFICATION ISSUES THAT NEED TO BE CONSIDERED, DETERMINATIONS REGARDING THE EXISTENCE OF ANY OTHER RECORDS RELATING TO THE EXPERIMENT, ORGANIZATION OF THE

RECORDS, AND STEPS TO ASSURE THE SAFEKEEPING OF THE RECORDS. IT IS ANTICIPATED THAT WHEN RECORDS RETRIEVAL PROCEDURES ARE ESTABLISHED, THE ORGANIZATION WILL BE REQUESTED TO MAKE TWO COPIES OF THE RECORDS, ONE FOR SUBMISSION AND ONE FOR RETENTION BY THE ORGANIZATION FOR PURPOSES OF ANY NECESSARY FOLLOW-UP ACTIVITIES, AND TO RETURN THE ORIGINAL DOCUMENTS TO THE PROPER

ARCHIVES OR RECORDS REPOSITORY. HOWEVER, PENDING INSTRUCTIONS ON RECORDS RETRIEVAL PROCEDURES, RECORDS ARE NOT TO BE FORWARDED TO THE COMMAND CENTER OR OTHER REPOSITORY. RATHER, THE RECORDS MUST BE MAINTAINED BY THE ORGANIZATION IN THE ORIGINAL RECORDS SERIES IN ACCORDANCE WITH THE ORGANIZATION'S ESTABLISHED RECORDS MANAGEMENT SYSTEM.

G. PRESERVATION OF RECORDS.

AS INSTRUCTED IN SECRETARY ASPIN'S JANUARY 7 MEMORANDUM, EACH ORGANIZATION MUST ASSURE THAT RECORDS RELATING TO HUMAN RADIATION RESEARCH ARE PRESERVED AND NOT DESTROYED. PERSONS RESPONSIBLE FOR ROUTINE RECORDS DISPOSAL PROCEDURES MUST BE ADVISED OF THE NEED TO PRESERVE THESE RECORDS.

H. CLASSIFICATION AND DECLASSIFICATION ISSUES.

1. POLICY OF MAXIMUM DECLASSIFICATION.

PAGE 05 RUEADWD5099 UNCLAS

THE INTERAGENCY WORKING GROUP HAS ESTABLISHED THE POLICY THAT AGENCIES SHOULD, UPON LOCATING RECORDS OF HUMAN RADIATION EXPERIMENTS WITHIN THE SCOPE OF THIS RECORDS SEARCH, REVIEW THE RECORDS FOR NATIONAL SECURITY CLASSIFICATION AND SHOULD DECLASSIFY SUCH RECORDS AS SOON AS PRACTICABLE AND TO THE MAXIMUM EXTENT POSSIBLE.

2. CLASSIFICATION REVIEW PROCEDURES.

CLASSIFIED INFORMATION MUST BE REVIEWED BY THE APPROPRIATE CLASSIFICATION AUTHORITIES BEFORE IT CAN BE DECLASSIFIED. CONSULT DOD DIRECTIVE 5200.1-R, CHAPTER M, FOR GUIDANCE ON DECLASSIFICATION PROCEDURES. IF THERE ARE DOCUMENTS WITHIN DOD'S POSSESSION FOR WHICH ANOTHER AGENCY IS THE ORIGINAL CLASSIFICATION AUTHORITY, THAT AGENCY MUST MAKE THE DETERMINATION TO DECLASSIFY THE INFORMATION. EVERY EFFORT SHOULD BE MADE TO EXPEDITE THIS DECLASSIFICATION PROCESS.

1. CONTRACTOR AND GRANTEE RECORDS.

WHEN AN ORGANIZATION DETERMINES THAT RECORDS OF A HUMAN RADIATION EXPERIMENT MAY BE IN THE POSSESSION OF A CONTRACTOR OR GRANTEE OF THE ORGANIZATION, THE ORGANIZATION MUST DOCUMENT THE NATURE OF THOSE RECORDS AND MAKE PLANS TO PURSUE RETRIEVAL. THE

PAGE Ø6 RUEADWD5Ø99 UNCLAS
ORGANIZATION SHOULD ATTEMPT TO FIND THE GOVERNING CONTRACT OR GRANT DOCUMENTS PERTAINING TO THE RESEARCH PROJECT OR PROGRAM INVOLVED AND SHOULD OBTAIN THE ASSISTANCE OF THE ORGANIZATION'S STAFF JUDGE ADVOCATE OR LEGAL COUNSEL TO DETERMINE RIGHTS AND OBLIGATIONS PURSUANT TO THE GOVERNING DOCUMENTS. THESE ACTIVITIES SHOULD PROCEED ON AN EXPEDITED BASIS.

J. RESTRICTIONS ON THE RELEASE OF RECORDS.

1. RELEASE OF RECORDS OUTSIDE FREEDOM OF INFORMATION ACT CHANNELS.

BECAUSE THERE MAY BE PERSONAL PRIVACY, SECURITY CLASSIFICATION, OR OTHER RESTRICTIONS ON THE RELEASE OF RECORDS OF HUMAN RADIATION EXPERIMENTS, IT IS ESSENTIAL THAT DOD ORGANIZATIONS NOT RELEASE RECORDS TO THE PUBLIC, UNLESS THE RELEASE HAS BEEN APPROVED BY THE COMMAND CENTER.

2. FREEDOM OF INFORMATION ACT PROCEDURES.

GUIDANCE WILL BE PROVIDED IN THE VERY NEAR FUTURE THROUGH FREEDOM OF INFORMATION ACT (FOIA) OFFICE CHANNELS REGARDING THE HANDLING OF FOIA REQUESTS PERTAINING TO HUMAN RADIATION EXPERIMENTS.

K. FORMAT FOR PART I OF REPORT.

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PRIORITY

DATE: Ø47
TIME: 1506

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FM DA WASH//DACS-ZA//
TO AIG 7406
AIG 7446

UNCLAS SECTION Ø3 OF Ø4

THE FOLLOWING FORMAT WILL ASSIST IN THE COMPILATION OF THE INFORMATION REQUESTED. IN ANY CASE IN WHICH THE REPORTING ORGANIZATION HAS NO INFORMATION TO REPORT, A NEGATIVE REPORT IS REQUIRED.

1. IDENTIFY EACH ORGANIZATION THAT, BASED ON MISSION OR ACTIVITIES, MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS. GIVE NAME AND LOCATION(S) OF THE ORGANIZATION AND NAME(S) AND LOCATION(S) OF ANY PREDECESSOR ORGANIZATIONS THAT MIGHT HAVE CONDUCTED OR SPONSORED SUCH EXPERIMENTS.

2. FOR EACH ORGANIZATION IDENTIFIED IN ITEM 1, IDENTIFY THE LOCATION(S) OF RECORDS OF THE ORGANIZATION WHERE RECORDS OF HUMAN RADIATION EXPERIMENTS, IF CONDUCTED OR SPONSORED, MIGHT BE LOCATED (OR HAVE BEEN LOCATED).

3. FOR EACH ORGANIZATION IDENTIFIED IN ITEM 1 AND EACH

PAGE Ø2 RUEADWD5100 UNCLAS
RECORDS REPOSITORY IDENTIFIED IN ITEM 2, DESCRIBE IN DETAIL THE EFFORTS UNDERTAKEN TO DETERMINE IF RECORDS EXIST OF HUMAN RADIATION EXPERIMENTS. LIST ALL FILES AND FILE SYSTEMS SEARCHED AND ALL INDIVIDUALS CONSULTED.

4. BASED ON THE RESULTS OF THE SEARCH DESCRIBED IN ITEM 3, STATE WHETHER ANY RECORDS OF POSSIBLE HUMAN RADIATION EXPERIMENTS WERE FOUND, AND, IF SO, IDENTIFY THE EXPERIMENTS.

L. FORMAT FOR PART II OF REPORT.

FOR EACH POSSIBLE HUMAN RADIATION EXPERIMENT IDENTIFIED IN ITEM 4 OF PART 1, PROVIDE AS MUCH OF THE FOLLOWING INFORMATION AS IS PRESENTLY POSSIBLE. START EACH SEPARATE EXPERIMENT ON A SEPARATE PAGE.

1. IDENTIFY THE POSSIBLE HUMAN RADIATION EXPERIMENT.
2. STATE WHERE AND WHEN IT TOOK PLACE.

3. IDENTIFY THE PRIMARY RESEARCHER(S).
4. IDENTIFY THE ORGANIZATIONS AND ENTITIES INVOLVED IN THE EXPERIMENT. INCLUDE ALL DOD ORGANIZATIONS, ANY OTHER FEDERAL AGENCY INVOLVED IN CONDUCTING OR SPONSORING THE PROJECT, AND ANY CONTRACTORS. GRANTEES. OR OTHER PARTIES. IDENTIFY THE DOD ORGANIZATION AND/OR THE OTHER AGENCY THAT WAS THE LEAD AGENCY.

PAGE Ø3 RUEADWD5100 UNCLAS
5. INDICATE THE NUMBER OF HUMAN SUBJECTS OF THE EXPERIMENT. INDICATE ANY AVAILABLE INFORMATION ON KNOWN CHARACTERISTICS OF THE CLASS OF SUBJECTS, SUCH AS: ACTIVE DUTY MEMBERS, RESEARCHERS, A RACIAL OR ETHNIC GROUP, PRISONERS, INSTITUTIONALIZED PERSONS, MEDICAL PATIENTS, CHILDREN, PREGNANT WOMEN. INDICATE WHETHER AVAILABLE INFORMATION INCLUDES NAMES OR OTHER IDENTIFYING INFORMATION CONCERNING THE SUBJECTS.
6. SUMMARIZE THE EXPERIMENT, INCLUDING AN IDENTIFICATION OF THE PURPOSE OF THE EXPERIMENT AND THE NATURE OF THE USE OF IONIZING RADIATION. AS EXAMPLES OF THE TYPES OF INFORMATION THAT WOULD BE HELPFUL, IF AVAILABLE INFORMATION PERMITS, PRELIMINARILY CLASSIFY THE POSSIBLE HUMAN RADIATION EXPERIMENT INTO ONE OF THE FOLLOWING CATEGORIES. (NOTE THAT THESE CATEGORIES ARE SOLELY FOR THE PURPOSE OF OBTAINING PRELIMINARY INFORMATION ABOUT THE EXPERIMENT THAT MAY FACILITATE ORGANIZATION OF THE RECORDS RETRIEVAL PROCESS. THESE ARE NOT OFFICIAL CLASSIFICATIONS FOR ANY PURPOSE. IN ADDITION, NOT ALL OF THESE CATEGORIES ARE NECESSARILY WITHIN THE ACTUAL SCOPE OF THE RECORDS SEARCH ACTIVITY, BUT MIGHT BE INVOLVED IN THE INITIAL IDENTIFICATION BECAUSE OF THE GUIDANCE TO ERR ON THE SIDE OF INCLUSION OF ALL

PAGE Ø4 RUEADWD5100 UNCLAS
POSSIBLE HUMAN RADIATION EXPERIMENTS.)
(A) CLEAR PURPOSE RADIATION RESEARCH -- THE PURPOSE OF THE EXPERIMENT WAS TO TEST THE HUMAN HEALTH EFFECTS OF IONIZING RADIATION. EXAMPLE: SUBJECTS EXPOSED TO RADIATION FOR THE PURPOSE OF MEASURING ADVERSE REACTIONS.
(B) THERAPEUTIC RESEARCH INVOLVING RADIATION -- THE

PURPOSE OF THE EXPERIMENT WAS TO TEST THE SAFETY AND EFFICACY OF USING IONIZING RADIATION TO DIAGNOSE OR TREAT A DISEASE OR MEDICAL CONDITION. EXAMPLE: CLINICAL RESEARCH ON BONE MARROW TRANSPLANTATION.

(C) OTHER RESEARCH -- THE EXPERIMENT WAS FOR ANOTHER PURPOSE (I.E., OTHER THAN CATEGORIES (A) OR (B)), BUT IN THE COURSE OF THE RESEARCH PROJECT, IONIZING RADIATION WAS USED IN ACCORDANCE WITH A ROUTINE, DIAGNOSTIC PROCEDURE. EXAMPLE- RESEARCH OF EFFECTS OF DENTAL COATING TO PREVENT CAVITIES, MONITORED THROUGH PERIODIC DENTAL X-RAYS.

(D) TREATMENT USE OF RADIATION -- THE USE OF RADIATION WAS FOR A MEDICAL TREATMENT PURPOSE, NOT A RESEARCH PURPOSE, BUT DATA WERE MAINTAINED ON RESULTS OR SIDE EFFECTS. EXAMPLE: RADIATION USED AS CANCER TREATMENT, WITH DATA REPORTED ON SIDE

PAGE 05 RUEADWD5100 UNCLAS
EFFECTS.

(E) UNKNOWN/UNCERTAIN -- AVAILABLE INFORMATION DOES NOT INDICATE CLASSIFICATION INTO A CATEGORY.

7. IDENTIFY THE LOCATION(S) OF RECORDS REGARDING THIS EXPERIMENT. INDICATE WHETHER ANY RECORDS ARE IN THE POSSESSION OF A CONTRACTOR OR GRANTEE, AND, IF SO, WHAT ACTION WILL BE INITIATED TO RETRIEVE THEM. INDICATE THE NAME OF THE INDIVIDUAL RESPONSIBLE FOR THE MAINTENANCE OF THE RECORDS.

8. INDICATE THE ESTIMATED NATURE AND QUANTITY OF THE RECORDS.

9. INDICATE WHETHER THE RECORDS ARE CLASSIFIED, AND, IF SO, WHAT ACTION HAS BEEN OR WILL BE INITIATED TO CONSIDER THE CLASSIFICATION.

M. INITIAL AND FOLLOW-UP REPORTS

THE INITIAL REPORT ON LOCATING RECORDS OF HUMAN RADIATION EXPERIMENTS IS DUE FEBRUARY 14. IT IS ANTICIPATED THAT THE IDENTIFICATION OF ORGANIZATIONS THAT MIGHT HAVE CONDUCTED OR SPONSORED HUMAN RADIATION EXPERIMENTS (PART I OF THE REPORT) WILL BE COMPLETE OR SUBSTANTIALLY COMPLETE BY THAT DATE. IT IS ALSO EXPECTED THAT THE IDENTIFICATION OF ALL SPECIFIC EXPERIMENTS

PAGE Ø6 RUEADWD5100 UNCLAS
POSSIBLY WITHIN THE SCOPE OF THE SEARCH WILL NOT BE COMPLETE, BUT THAT PART II OF THE FEBRUARY 14 REPORT WILL BE AN INTERIM REPORT. A COMPLETE REPORT, CONSISTING OF BOTH PARTS, IS DUE FEBRUARY 28. ANY REPORTING ORGANIZATION THAT IS UNABLE TO GIVE A COMPLETE REPORT BY FEBRUARY 28 MUST NONETHELESS REPORT BY THAT DATE AND PROVIDE THE NECESSARY SUPPLEMENTS AS SOON THEREAFTER AS POSSIBLE. EVEN AFTER AN ORGANIZATION PROVIDES ITS COMPLETE REPORT, IF ANY NEW INFORMATION IS DISCOVERED REGARDING THE MATTERS COVERED IN THE REPORTS SUBMITTED, THE ORGANIZATION HAS A DUTY TO SUPPLEMENT ITS REPORTS TO ASSURE THEIR COMPLETENESS AND ACCURACY.
N. RESOLUTION OF QUESTIONS
EVERY EFFORT SHOULD BE MADE TO AVOID THE NEED TO REPEAT ANY OF THE STEPS INVOLVED IN THE RECORDS LOCATION TASK. THEREFORE, ORGANIZATIONS SHOULD BE ENCOURAGED TO RESOLVE ANY QUESTIONS OR UNCERTAINTIES AT THE EARLIEST POSSIBLE TIME. THIS SHOULD BE DONE THROUGH THE ORGANIZATION'S CHAIN OF AUTHORITY AND UP TO THE COMMAND CENTER.
O. COMMAND CENTER ADDRESS AND TELEPHONE.
THE ADDRESS AND TELEPHONE NUMBER OF THE COMMAND CENTER, TO WHICH THE REQUESTED REPORTS ARE TO BE SENT AND TO WHICH INQUIRIES

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PRIORITY

DATE: Ø47
TIME: 15Ø7

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P 151600Z FEB 94
FM DA WASH//DACS-ZA//
TO AIG 7406
AIG 0446
BT
UNCLAS FINAL SECTION OF Ø4
MAY BE MADE, ARE:
DOD RADIATION EXPERIMENTS COMMAND CENTER
1211 S. FERN ST., ROOM 217
ARLINGTON, VA. 22202
TELEPHONE: (703) 602-1365
XXXXXXXXXX END EXTRACT XXXXXXXXXX
2. THE ASSISTANT SECRETARY OF THE ARMY FOR MANPOWER AND RESERVE AFFAIRS IS THE ARMY CENTRAL POINT OF CONTACT FOR ALL REPORTING REQUIRED IN THE ABOVE GUIDANCE. YOU WILL FORWARD ALL REPORTS TO HIS OFFICE. MY POC FOR THIS ACTION IS COL SUTTLE, DSN 227-2044 OR COMM 703-697-2044. FAX IS DSN 227-5075 OR COMM 703-697-5075.
3. PART I OF YOUR REPORT (AS DEFINED IN EXTRACT PARAGRAPH K) SHOULD HAVE BEEN PROVIDED AS DEFINED IN REF B. MANY ADDRESSEES HAVE NOT COMPLIED WITH THIS REQUIREMENT AND SHOULD RESPOND BY RETURN FAX.

PAGE Ø2 RUEADWD51Ø1 UNCLAS
4. NEGATIVE REPORTS ARE REQUIRED.
5. PART II MUST BE PROVIDED AS SOON AS POSSIBLE, BUT NOT LATER THAN 22 FEB 94. YOU WILL PROVIDE BI-WEEKLY REPORTS EACH THURSDAY STARTING 24 FEB UNTIL YOUR FINAL REPORT IS COMPLETED. WITH YOUR FIRST PART II REPORT, YOU WILL PROVIDE AN ESTIMATED COMPLETION DATE. THIS ESTIMATE MUST BE UPDATED WITH EACH FOLLOWING BI-WEEKLY UPDATE.
6. PARAGRAPH 10 OF REF B DEFINED SPECIFIC REPORTING REQUIREMENTS IN EXCESS OF THOSE DEFINED IN THE EXTRACT ABOVE; SPECIFICALLY, THE EFFECTS ON PARTICIPANTS, WHETHER THERE WAS MEDICAL FOLLOW-UP, AND WHETHER INFORMED CONSENT WAS OBTAINED. THIS INFORMATION IS STILL REQUIRED AND SHOULD BE INCLUDED IN ADDITION TO THE NINE PARAGRAPHS DEFINED IN THE EXTRACT.
7. FOIA GUIDANCE HAS BEEN DISSEMINATED AS SAIS-IDP MSG DTG 101500Z FEB 94, SUBJECT: GUIDANCE FOR PROCESSING REQUESTS FOR INFORMATION

TO: MT- DA- L

RE-DISTRIBUTION OF THIS MESSAGE FOR GUIDANCE AS CHANGES IN THE RECEIPTING SYSTEM FOR SECRET OCCUR.

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D.P.G.
ACTION COPY TO: SO
INFO COPY TO: SC
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FILE

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ZNY EEEEE
R 141635Z FEB 78
FM ODRCARCOM ALEX VA//DRCLDC//
TO RULNAPG/CDRTECOM APG MD//DRSTE-PP-E//
RUEOEKA/CDRARRADCOM DOVER NJ
INFO RULNAPG/DIRCSL APG MD
RUWJHPA/CDR DPG DUGWAY UT
R 1514222 DEC 77
FM DA WASHDC //DACS-DMC//
TO RUCLAIA/CDRUSATRADOC FORT MONROE, VA
RUAGAAA/CDRUSAEIGHT SEOUL, KOREA
RUCLHTB/CDRUSAFORSCOM FORT MCPHERSON, GA
RUKLDAR/CDRDARCOM ALEXANDRIA, VA
RUFDAAA/CINCUSAREUR HEIDELBERG, GER
RUADJHA/CDRUSARJ CAMP ZAMA, JAPAN
RUWTNFA/CDRUSAHSC FORT SAM HOUSTON, TX
RUDHAAA/CDRINSCOM AHS, VA
~~RUEAMDW/CDRMDW WASH DC~~
RUKGCID/CDRUSACIDC BAILEYS CROSSROADS, VA
RUEADWD/DA WASHDC //DAIG-ZX//
RUEADWD/DA WASHDC //DASG-ZX//
BT
UNCLAS E F T O FOUO
SUBJECT: DESTRUCTION OF DOCUMENTS CONCERNING ARMY CW, BW TESTING PROGRAM
A. DA MESSAGE, DATED 1514122 SEP 77, SUBJECT SAME AS ABOVE.
1. ADDRESSEES ARE REMINDED THAT REFERENCE MESSAGE DIRECTED THE

PAGE 2 RUEADWD1241 UNCLAS E F T O FOUO
PRESERVATION OF ALL DOCUMENTS PERTAINING TO CHEMICAL AND BIOLOGICAL WARFARE RESEARCH TO INCLUDE THAT RESEARCH PERFORMED FOR THE DEPARTMENT OF THE ARMY BY UNIVERSITIES AND OTHER PRIVATE AGENCIES.
2. THE DIRECTIVE INCLUDES CONTRACTS, CORRESPONDENCE, PROGRESS REPORTS, INTERNAL MEMORANDA AND LETTERS, ACCOUNTS AND MINUTES OF MEETINGS, FINANCIAL AND PROCUREMENT RECORDS, CARD FILES, INDEXES AND OLD AND NEW REGULATIONS AND PROTOCOLS ISSUED BY ANY DEPARTMENT OF THE ARMY ELEMENT, HISTORICAL MATERIAL CONCERNING THE ORGANIZATION AND FUNCTIONS OF DA ELEMENTS INVOLVED IN CHEMICAL OR BIOLOGICAL WARFARE RESEARCH, NOTES, RECORDS OF DA PERSONNEL AND PRIVATE INDIVIDUALS INVOLVED IN CHEMICAL AND BIOLOGICAL WARFARE RESEARCH, AND ANY OTHER DOCUMENTS RELATED IN ANY WAY TO CHEMICAL AND BIOLOGICAL WARFARE RESEARCH.
3. WHEREVER POSSIBLE, DOCUMENTS OF THE NATURE DESCRIBED ABOVE SHOULD REMAIN IN THEIR PRESENT STORAGE SITES. IN THOSE CASES WHERE OPERATIONAL NECESSITY DICTATES MOVEMENT OF THE STORED MATERIAL TO A NEW LOCATION, THE RESPONSIBLE AGENCY WILL ENSURE THAT UPON ARRIVAL AT THE NEW SITE, THE DOCUMENTS ARE CENTRALLY LOCATED AND REASONABLY ACCESSIBLE FOR REVIEW. IF THE CHANGE OF LOCATION DICTATES REMOVAL OF THE MATERIAL FROM PRESENT STORAGE CONTAINERS AND SUBSEQUENT

PAGE 3 RUEADWD1241 UNCLAS E F T O FOUO
STORAGE IN DIFFERENT CONTAINERS, AN INVENTORY LIST WILL BE PREPARED.
4. ALL MATERIAL PERTAINING TO THIS SUBJECT SHOULD BE IDENTIFIED AND LOCATED. UNDER NO CIRCUMSTANCES WILL THESE DOCUMENTS BE DESTROYED PURSUANT TO NORMAL DESTRUCTION SCHEDULES OR FOR ANY OTHER REASON. THE PROCEDURES OUTLINED WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.
BT
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ZNR UUUUU
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FM CDRTECOM APG MD//DRSTE-SG-A//
TO RUWJHTA/CDRWSMR NM//STEWS-DP-S//
RUWJHPA/CDRDPG DUGWAY UT//STEDP-SO//
RUWJHUA/CDRYPG YUMA AZ//STEYP-SE//
RUCIAMA/CDRJPG MADISON IN//STEJP-SE//
RULNAPG/CDRAPG APG MD//STEAP-SO//
RUWJHRA/CDRUSAEPG FT HUACHUCA AZ//STEEP-MM-IS//
RULPAKA/CDRUSATTC COROZAL PANAMA//STETC-MO-A//
RUWSFFA/CDRUSACRTC FT GREELY AK//STECR-AD-S//
RUCLFUA/CDRUSAAVNDTA FT RUCKER AL//STEBG-SE//
R 011010Z APR 81
FM CDRDARCOM ALEX VA //DRCSS//
TO AIG 865 //SCTY MGRS//
ZEN/CDRDARCOM ALEX VA //DRXAM-S//
R 271535Z MAR 81
FM HQ DA WASHDC
TO AIG 7406
ARSTAF
BT
UNCLAS
FOR SECURITY MANAGERS
SUBJ: SYSTEMATIC DECLASSIFICATION REVIEW OF BRITISH INFORMATION
A. REF OSD MEMO, SAB, 24 MAR 81, (NOTAL)
1. MEMO AT REF A ABOVE IS EXTRACTED FOR YOUR INFORMATION AND/OR APPROPRIATE ACTION:
IT RECENTLY HAS COME TO MY ATTENTION THAT THE UNITED KINGDOM HAS EXPRESSED SOME CONCERN OVER THE PREMATURE RELEASE OF PRE-THIRTY YEAR OLD BRITISH INFORMATION. THIS CONCERN CENTERS ON U.S. ORIGINATED DOCUMENTS THAT CONTAIN BRITISH INFOR-MATION PROVIDED IN ANY MANNER, INCLUDING CONVERSATIONS OR ANY INFORMATION/MEETINGS, WITH THE EXPECTATION, EXPRESSED OR IMPLIED, THAT THE INFORMATION WILL BE

PAGE 2 RUKLDAR0023 UNCLAS
HELD IN CONFIDENCE.
IT IS REQUESTED THAT SYSTEMATIC DECLASSIFICATION REVIEWERS IN YOUR ORGANIZATIONS BE MADE AWARE OF THIS BRITISH CONCERN, AND IN REVIEWING INFORMATION GENERATED PRIOR TO THE EFFECTIVE DATE OF EXECUTIVE ORDER 12065 THAT APPROPRIATE CONSIDERATION BE GIVEN TO THE APPLICATION OF CURRENT CLASSIFICATION CRITERIA GOVERNING THE CLASSIFICATION OF FOREIGN GOVERNMENT INFORMATION.
2. DAMI-CIS POC IS LTC MCCAFFREY, AV 22-56481/77520.
BT
#3421

PTT-LN
JOD
IM-A
XO/CO

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ROUTINE * U N C L A S S I F I E D *
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RTTUZYUW RUEADWD8398 2921800-UUUU--RUCRARM.
ZNR UUUUU
R 191522Z OCT 90 ZOC ZEO T ALL US ARMY REPS AND ACTIVITIES
FM USACMH WASHINGTON DC//DAMH-HSR-D//
TO ALARACT,
BT
UNCLAS ALARACT 088/90
SUBJ: THE ARMY-WIDE MANDATORY AND SYSTEMATIC DECLASSIFICATION PROGRAMS
A. UNCLASS EXECUTIVE ORDER 12356, NATIONAL SECURITY INFORMATION
B. UNCLASS AR 380-5, DA INFORMATION SECURITY PROGRAM
C. UNCLASS AR 25-55, DA FREEDOM OF INFORMATION ACT PROGRAM
1. IN RESPONSE TO INQUIRIES AND TO AMPLIFY GUIDANCE IN REF B, THE FOLLOWING IS PROVIDED IN REGARD TO THE MISSION AND FUNCTION OF THE ARMY-WIDE MANDATORY AND SYSTEMATIC DECLASSIFICATION PROGRAMS.
2. PROMULGATED BY REF A THE MANDATORY AND SYSTEMATIC PROGRAMS ARE IMPLEMENTED WITHIN ARMY BY REF B CHAPTER III, PARAS 3-202D, 3-303 B1(B), AND 3-303 B2. THEY EXIST TO FILL THE VOID CREATED WHEN NO APPARENT DECLASSIFICATION AUTHORITY EXISTS FOR NON-CURRENT CLASSIFIED ARMY RECORDS AND TO LEND DECLASIFICATION ASSISTANCE TO THE ARCHIVIST OF THE US AS NECESSARY.
3. REQUESTS FOR DECLASSIFICATION REVIEW OF ARMY RECORDS WILL NORMALLY

PAGE 02 RUEADWD8398 UNCLAS
BE SENT TO THE CUSTODIAN/ORIGINATOR OF THE PARTICULAR RECORD OR IF NEITHER IS KNOWN REQUESTS WILL BE SENT TO THE US ARMY INFORMATION SYSTEMS COMMAND-PENTAGON IAW REF C APPENDIX B, PARA 2B. CUSTODIANS MAY DECLASSIFY RECORDS IAW ESTABLISHED ARMY/DOD GUIDELINES. ORIGINATORS/PROPONENTS MAY DECLASSIFY RECORDS BASED UPON ESTABLISED GUIDELINES OR DELEGATED DECLASSIFICATION AUTHORITY.
4. CMH WILL PERFORM DECLASSIFICATION REVIEWS WHEN:
A. REQUESTS ARE RECEIVED FOR DECLASSIFICATION OF ARMY RECORDS IN FEDERAL DEPOSITORIES, THE NATIONAL ARCHIVES, OR OTHER AGENCIES OR INSTITUTION WHERE ARMY/DOD GUIDELINES DO NOT APPLY AND THE ORIGINATOR PROPONENT CANNOT BE IDENTIFIED;
B. REQUESTS ARE RECEIVED FOR DECLASSIFICATION OF RECORDS CONTAINING INFORMATION UNDER THE JURISDICTION OF SEVERAL ARMY ELEMENTS WHERE FINAL AND EXCLUSIVE CLASSIFICATION AUTHORITY CANNOT BE DETERMINED;
C. CUSTODIANS UNDERTAKE A SYSTEMATIC REVIEW OF THEIR CLASSIFIED HOLDINGS AND THE CIRCUMSTANCES OF PARA 5A OR 5B ARE PRESENT.
5. REQUESTS TO CMH FOR DECLASSIFICATION REVIEW MUST BE IN WRITING AND MUST INCLUDE A COPY OF THE DOCUMENT TO BE DECLASSIFIED.
6. AS TIME AND PERSONNEL RESOURCES PERMIT, CMH PERSONNEL WILL PERFORM

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ROUTINE * U N C L A S S I F I E D *
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ROUTINE * U N C L A S S I F I E D *
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PAGE 03 RUEADWD8398 UNCLAS
OFFSITE DECLASSIFICATION REVIEW OF ARMY RECORDS AND INFORMATION IN FEDERAL DEPOSITORIES WHERE THE SENSITIVITY OR PROVENANCE OF THOSE RECORDS PRECLUDE SHIPMENT TO CMH. ALL TDY EXPENSES ARE THE RESPONSIBILITY OF THE REQUESTING AGENCY.
7. NO OTHER INDIVIDUAL OR AGENCY IS AUTHORIZED TO PERFORM THE FUNCTIONS IN PARAS 5-7 EXCEPT CMH UNLESS PRIOR APPROVAL OR COORDINATION HAS BEEN EFFECTED WITH CMH.
8. THE CMH MAILING ADDRESS IS: US ARMY CENTER OF MILITARY HISTORY, ATTN: DAMH-HSR-D, BLDG 159, SEFC/NAVY YARD, WASHINGTON DC 20374-5088.
9. POC THIS ACTION IS MR RALPH JOHNSON (AUTOVON) 335-2562 OR COMMERCIAL (202) 475-2562.
EXPIRATION DATE CANNOT BE PREDETERMINED.
BT
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ROUTINE * U N C L A S S I F I E D *
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R 122205Z JUN 91
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TO ZEN/AIG 7405
ZEN/AIG 7406
AIG 7446
AIG 12418
ZEN/CDRUSASOCOM FT BR4GG NC //AIOM//
INFO ZEN/DA WASHINGTON DC //SAAA/SAIS-PDD/DAPE/DAMD/
DAMI/DALO/DAAR/DAJA/DASG//
ZEN/CUSAISCLNO WASHINGTON DC //ASLW//
BT
UNCLAS
PASS TO INFORMATION AND RECORDS MANAGERS
SUBJ: MORATORIUM ON DESTRUCTION OF RECORDS
A. AR 25-400-2 THE MODERN ARMY RECORDKEEPING SYSTEM (MARKS)
1. DEPARTMENT OF DEFENSE HAS ANNOUNCED AN INDEFINITE EXTENSION OF THE RETENTION PERIODS FOR EMPLOYMENT APPLICATION RECORDS AND PERSONNEL SECURITY CLEARANCE FILES IN THE CUSTODY OF DOD COMPONENT CIVILIAN PERSONNEL OFFICES, SECURITY OFFICES, AND CONTRACTORS. THIS EXTENSION IS TO COMPLY WITH A TEMPORARY

PAGE 02 RUCIMDA0532 UNCLAS
RESTRAINING AND PROTECTIVE ORDER ISSUED ON 20 MAY 91 BY THE U.S. FEDERAL DISTRICT COURT OF THE DISTRICT OF COLUMBIA. ALL ARMY ACTIVITIES AND CONTRACTORS WILL CEASE DESTROYING ANY AND ALL EMPLOYMENT OR FELLOWSHIP APPLICATIONS, PROMOTION APPLICATIONS OR NOMINATIONS, REQUESTS FOR SECURITY CLEARANCE, AND ANY AND ALL RELATED RECORDS AND FILES FOR ANY POSITION OR OPPORTUNITY WITHIN THEIR ORGANIZATIONS FROM 2 JANUARY 1987 TO PRESENT UNTIL FURTHER NOTICE.
2. OUR RECORDS INDICATE THAT A MORATORIUM ON DESTRUCTION OF THE FOLLOWING RECORDS STILL EXISTS:

NARA CODE	TITLE	ORG
ORG	AGENT ORANGE AND OTHER HERBICIDES	JDHQ-ESG-A
	WESTSIDE HIGHWAY PROJECT	COE
	TRAFFIC DISTRIBUTION RECORDS	MTMC
BZZ	INDIVIDUAL FINANCIAL HISTORY RECORDS	USAFAC
	U.S. VS. SHELL OIL (ROCK ISLAND)	TJAG
IRA	IRAN FOREIGN MILITARY SALES	OSD
RMT	CIVILIAN HEALTH RECORDS	HSC
	ROCKY MOUNTAIN ARSEN4L	
	RECORDS OF TWIN CITIES ARMY AMMUNITION	TJAG

****
ROUTINE * U N C L A S S I F I E D *
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IM L
IM-A
CPO
PM
EN
MT
JOD

ROUTINE

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* U N C L A S S I F I E D *
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	PLANT	
CBW	BIOLOGICAL & CHEMICAL WARFARE RECORDS	DACS-DMC
NTP	NUCLEAR TEST PERSONNEL REVIEW (NTPR)	DNA
ABS	ASBESTOS RELATED RECORDS	DOJ

3. REQUEST THIS OFFICE BE NOTIFIED IMMEDIATELY IF YOU RECEIVE NOTICE OF OTHER EXTENSIONS OR RELIEF FROM EXTENSIONS OF RETENTION PERIODS FOR ARMY RECORDS.

4. HQ, USAISC POINT OF CONTACT IS MONETTE BLANCO, ASOP-MR, DSN 879-4750, COMMERCIAL (602) 538-4750.

BT

#0532

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ROUTINE

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* U N C L A S S I F I E D *
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ROUTINE

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* U N C L A S S I F I E D *
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RAAUZYUW RUCIMDA0883 2700805-UUUU--RUFEDAP.
ZNR UUUUUU
R 241616Z SEP 91
FM CDRUSAISC FT HUACHUCA AZ //ASOP//
TO AIG 7405
AIG 7406
AIG 7446
AIG 12418
RUEOHNA/CDRUSASOCOM FT BRAGG NC //AIOM//
INFO RUEADWD/DA WASHINGTON DC //SAAA/SAIS-PDD/DAPE/DAMD/
DAMI/DALO/DAAR/DAJA/DASG//
RUEAUSA/CUSAISCLNO WASHINGTON DC //ASLW//
BT
UNCLAS
PASS TO INFORMATION AND RECORDS MANAGERS
SUBJ: UPDATE ON MORATORIUMS ON DESTRUCTION OF RECORDS
A. MSG THIS HQ ASOP 122205Z JUN 91 SUBJ MORATORIUM ON DESTRUCTION OF RECORDS
B. MSG USPERSCOM ALEX VA TAPC-CPF-S 231806Z MAY 91 SUBJ NOTICE TO CPOS CONCERNING DOD LITIGATION (HUHYN AND ROGINSKY)
1. THIS IS AN UPDATE ON MORATORIUMS ON DESTRUCTION OF THE FOLLOWING RECORDS:

PAGE 02 RUCIMDA0883 UNCLAS
A. EMPLOYMENT APPLICATION RECORDS AND PERSONNEL SECURITY CLEARANCE FILES IN THE CUSTODY OF DOD COMPONENT CIVILIAN PERSONNEL OFFICES, SECURITY OFFICES, AND CONTRACTORS. THIS MORATORIUM IS TO COMPLY WITH THE TEMPORARY RESTRAINING AND PROTECTIVE ORDERS ISSUED ON 20 MAY 1991 BY JUDGE HOGEN, U.S. DISTRICT COURT, DISTRICT OF COLUMBIA, IN THE CASE OF HUYHN ET AL V. CHENEY, CIVIL ACTION NO. 87-3436, AND ROGINSKY V. CHENEY, CIVIL ACTION NO 90-0025. THESE CASES INVOLVE POSSIBLE IMPROPER DENIAL OF EMPLOYMENT OR SECURITY CLEARANCES TO NATURALIZED CITIZENS FROM COUNTRIES WHOSE INTERESTS ALLEGEDLY ARE ADVERSE TO THE UNITED STATES. THE DOCUMENTS TO WHICH THIS ORDER APPLIES INCLUDE ANY AND ALL APPLICATIONS OR INQUIRIES CONCERNING EMPLOYMENT OF ANY KIND OR TYPE, PROMOTION OR SECURITY CLEARANCE REQUESTS, OR INQUIRIES FROM NATURALIZED U.S. CITIZENS FROM THOSE COUNTRIES FROM 2 JAN 87 UNTIL FURTHER NOTICE. ALSO, APPLICATIONS OF ALL OTHER PERSONS FOR THOSE POSITIONS FOR WHICH A NATURALIZED U.S. CITIZEN APPLIED OR MADE INQUIRY MUST BE RETAINED.
B. AGENT ORANGE AND OTHER HERBICIDES (ORG) THE U.S. ARMY AND JOINT SERVICES ENVIRONMENTAL SUPPORT GROUP (ESG) HAS NOTIFIED THAT THE AGENT ORANGE AND HERBICIDE RELATED RECORDS FREEZE CAN BE TERMINATED. RECORDS AFFECTED BY THIS FREEZE WERE THOSE WHICH

ROUTINE

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* U N C L A S S I F I E D *
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ROUTINE ********** * U N C L A S S I F I E D * **********

PAGE 03 RUCIMDA0883 UNCLAS
RELATED TO HERBICIDE DEVELOPMENT, TESTING, USE, PURCHASE, STORAGE AND TRANSPORTATION. THESE RECORDS MAY NOW BE DISPOSED OF UNDER APPLICABLE DISPOSITION AUTHORITY IN AR 25-400-2, THE MODERN ARMY RECORDKEEPING SYSTEM, 15 OCT 86.

C. TRAFFIC DISTRIBUTION RECORDS (TDR). THIS MORATORIUM IS STILL IN EFFECT PER INFORMATION PROVIDED BY THE DEPARTMENT OF JUSTICE TO HQ, MILITARY TRAFFIC MANAGEMENT COMMAND.

D. RECORDS OF TWIN CITIES ARMY AMMUNITION PLANT (TCA). THE OFFICE OF THE JUDGE ADVOCATE GENERAL NOTIFIED US THAT THIS FREEZE SHOULD CONTINUE UNTIL THE CONCLUSION OF BOTH WERLIEIN V. UNITED STATES AND CITY OF NEW BRIGHTON V UNITED STATES AND APPROPRIATE LEGAL AUTHORITIES DETERMINE THAT THE FREEZE MAY BE LIFTED.

E. INDIVIDUAL FINANCIAL HISTORY FILES (WYATT, ET AL V US) (BZZ) IS STILL IN EFFECT AT THE DEFENSE FINANCE AND ACCOUNTING SERVICE, INDIANAPOLIS CENTER.

2. HQ, USAISC POINT OF CONTACT IS MONETTE BLANCO, ASOP-MR, DSN 879-4750, COMMERCIAL (602) 538-4750.

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ROUTINE ********** * U N C L A S S I F I E D * **********

USACC DUGWAY
UTAH CCNC-TCC

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ZNR UUUUU
R 132027Z DEC 79
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R 121432Z DEC 79
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TO CDRTECOM APG MD //DRSTE-SE//
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UNCLAS
SUBJ DECLASSIFICATION AUTHORITY
A. DRSTE-SE MSG 111812Z DEC 79, SAB.
CONCUR WITH TECOM POSITION STATED IN REF A. AS SUCCESSOR ORGANIZATION, DUGWAY PROVING GROUND AUTHORIZED TO DECLASSIFY INFORMATION PREVIOUSLY UNDER COGNIZANCE OF DESERET TEST CENTER, REGARDLESS OF CURRENTLY ASSIGNED CLASSIFICATION.
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SUNDAY

Deseret News

144TH YEAR / No. 300 SALT LAKE CITY, UTAH SUNDAY, APRIL 10, 1994

1949-62

Did Dugway conduct over 600 radiation tests?

Officials remain taciturn, but newly released papers reveal massive project.

By Lee Davidson
Deseret News Washington correspondent

WASHINGTON — In Utah in the 1950s, the Army spread radioactive pellets from high-altitude aircraft, tested dust generators that spewed radioactive specks and exploded radioactive metal in a variety of shapes to see which would most effectively spread contamination.

The smallest of those until-now secret tests released 6.7 times as much radiation as the infamous Three Mile Island nuclear reactor accident. The largest known test among them released a whopping 2,000 times more.

Documents obtained by the Deseret News through the Freedom of Information Act suggest more than 600 such tests may have occurred but contain specifics on just 27 until-now undisclosed open-air experiments.

The information became available three months after congressional probers working for the U.S. General Accounting Office first revealed six other radiation weapons tests at Dugway Proving Ground that dropped cluster bombs to scatter radioactive material packed inside.

President Clinton has ordered creation of a commission that will study the ethics of radiation experiments and review those six GAO-revealed tests, which now appear to have been just the tip of the iceberg in Utah.

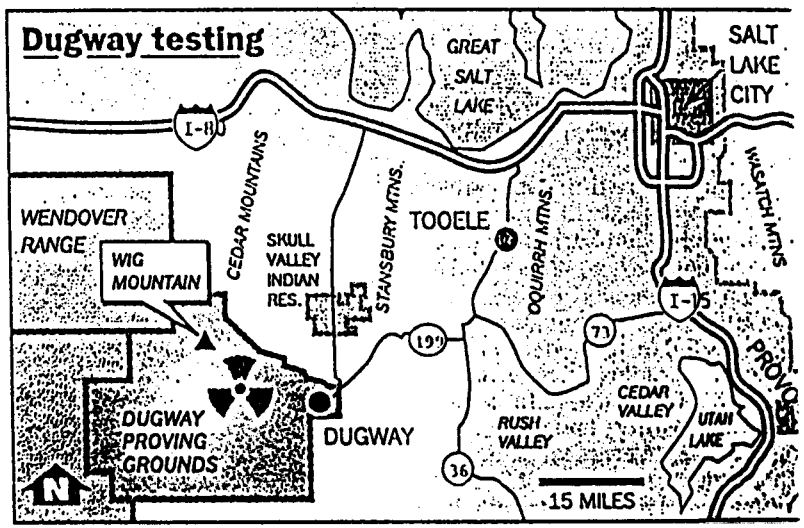
Documents show that many tests were part of a full-scale program at Dugway to develop weapons to radiologically contaminate not only battlefield areas but also enemy cities. Watchdog groups said the Army denied all such programs for years.

Documents also suggest the program may have continued years beyond the tests in the 1949-1952 period for which information was released by the U.S. Army Chemical and Biological Defense Command.

One nuclear expert guesses that most contamination was likely limited to the remote, Rhode-Island-size Dugway base. Another worries that radioactive dust may have been carried by winds off the base or may have entered the local food chain.

All experts say that the sketchy information obtained so far makes it impossible to say how dangerous the testing was.

"It's tough to tell. But frankly, Dugway was doing things that were unacceptable then, let alone by today's standards," said Dr. Karl Z. Morgan, who was director of health physics at Oak Ridge National Laboratory for 29 years and who had some contact with Dugway officials during the test periods.



Documents say four major types of radiation weapons tests occurred at Dugway between 1949 and 1952:

• **Cluster bombs:** Cluster bombs weighing a ton each were dropped from airplanes flying at 20,000 feet. Munitions were exploded about 800 feet above ground, showering the surrounding area with radioactive tantalum metal — with particles traveling up to 7,80(feet per second. Various types of explosives were used in an attemp to create smaller particles, which could travel farther.

Please see **RADIATE** *on A1*

RADIATE

Continued from A1

Such tests released between 1,500 and 30,000 curies of radiation each. In comparison, Three Mile Island is reported to have released 15 curies (but created great worry because it had the potential to release much more near large cities).

• **Small pellets:** Tests were designed and approved for "a system for dropping small pellets from a hopper in a plane at high altitudes." Released documents do not confirm that they were carried out but indicate they were imminent.

• **Radioactive specks:** Dust generators were used to spread radioactive specks "over large areas." The dust was to be ejected from small spherical units "by the burning of smokeless powder." Some were to be used on the ground, and some similar munitions were to be dropped from airplanes.

• **Munitions explosions:** Cross sections of munitions were exploded from platforms or poles to determine which shapes of radioactive material would lead to maximum contamination. Each test released about 100 curies of radiation.

1 million curies

The Army wanted the tests to lead to a "completed munition containing one megacurie of activity" by 1954, but documents do not reveal whether that goal was achieved. A megacurie is 1 million curies of radiation, which the Army hoped to spread over areas of between one and 10 square miles.

"To put that in context, one curie (the amount of radiation from one gram of radium) is about the most that Madam Curie ever had in her lab. And that killed her (by leukemia), her daughters and most of her workers," said Preston J. Truman, president of the Downwinders watchdog group.

Keith Schiager, director of the University of Utah Radiological Health Department, said most scientists in protective clothing measure their radiation exposure in thousandths, millionths or even smaller increments of curies.

Truman added, "All the low-level radioactive waste dumped at the Envirocare facility in the desert each year — under tight control — amounts to only 1 or 2 curies . . . Material that hot (the Dugway test material) would never be allowed at Envirocare. It wasn't low-level stuff."

The largest of the known tests was expected to release 30,000 curies in 1951. Officials called it a "heat transfer study" to help them research and address "the problem involved in the dissipation of heat generated in an RW (radiological warfare) munition."

Truman said, "30,000 curies is about what some of the leaks from underground (nuclear bomb) testing in Nevada released. That's a lot."

'Very hot stuff'

All the tests used radioactive tantalum, a metallic element. Morgan said the isotope the Army probably used was tantalum 182 — which he said likely would have been made by placing regular tantalum 181 in nuclear reactors at Oak Ridge, allowing it to capture an extra electron over time and become radioactive.

"It was very hot stuff," he said. Morgan, who is also a retired professor of nuclear physics at Georgia Tech, added that maybe only plutonium was more dangerous among common radioactive material at the time. He said tantalum 182 was more cancer-causing than such elements as cesium and strontium 90.

Morgan was chairman of a committee that established permissible exposure levels for various radioactive materials, including tantalum 182. He said acceptable exposure was just 7 microcuries (seven one-thousandths), based on its potential to cause cancer in the liver or the gastrointestinal tract.

Morgan said workers could be around air with no more than .00000009 microcuries per cubic centimeter of air. The maximum allowed for the general public was one-thirtieth of that amount.

"It was not something you would want to be around," Morgan said.

How dangerous?

Morgan, Schiager and Truman said assessing exactly how dangerous the testing was cannot be done without knowing the weather and wind conditions, how far material was spread, the size of the particles and the extent of cleanup.

The Deseret News has requested such information. But Pentagon spokesman Bob Potter said providing the material would require significant research, if such 42-year-old information even exists, and the newspaper's request is in line behind dozens of other requests. He did not expect that a response would be generated promptly.

But Schiager said, "When the tests talk about dropping radioactive pellets, it makes it sound like the particles were big enough that they would fall to the ground fairly quickly.

"They could still blow a ways, like maybe a mile or two — but not hundreds of miles," he said. "But all that is just a guess without knowing exactly how big the particles were. And you don't have that."

Morgan said researchers at Oak Ridge, where he worked, would have covered any such pellets with stainless steel, "and then they could have been collected on the ground easily by someone using a Geiger counter. But I don't have any idea if Dugway did that."

He said other experiments designed to spread radioactive dust or explode tantalum into small particles make him worry that "they could have gone all over in the wind," possibly reaching cities or "getting into the food chain." Dugway is a huge base, where wildlife freely roam in and out of the borders.

Lax safety?

Wording in some of the documents could add fuel to worries about contamination spreading beyond Dugway.

First in 1951, a subcommittee overseeing radiological weapons testing recommended that "meteorological requirements for carrying out the tests could be reduced considerably, if necessary, in order to get the tests off on time" — which suggests the Army was more concerned about schedules than safety.

The same committee also recommended a change so that "no detailed upper air meteorological data are required subsequent to two or three hours after each test" — which could present problems in knowing how far small particles may have traveled.

Also, documents about cluster-bomb testing in 1950 indicate more powerful explosives were used than in 1949, in an effort to "cause greater break-up of particles" — which might allow them to travel farther, and not quickly fall to the ground.

And documents discussing dust-generator tests in 1950 noted that in at least three of 15 scheduled tests, "no control over particle size appears possible" — meaning the extent of the dispersal could not be pre-determined. Designers said they hoped particles could "be dispersed over large areas."

But Army documents did note the military directed that "as low an amount of radioactivity should be used . . . as is consistent with accurate samples (about 500 curies per sq. mi.)"

Dugway's track record

Still, some previously disclosed behavior by Dugway in the same time period with chemical and biological warfare tests may also raise some concern about its radiological work.

For example, the Deseret News revealed three years ago that Dugway scientists dropped toxic cadmium sulfide from airplanes throughout the Eastern United States without warning in tests designed to see how biological agents

might be spread.

Other documents released through the years to the Deseret News and Congress said that chemical and biological tests were not confined to the base in Utah. For example, one 66-square-mile area south of the base is so contaminated that the military wanted to add it to Dugway's borders.

Morgan said he visited Dugway a couple of times in the 1950s while such testing was ongoing and was under instructions to help the Army where possible with some technical problems. "But I didn't know what it was doing. If I had, I would have raised all hell."

But he noted the military was "under tremendous pressure" to gauge the feasibility of radiological and other warfare. Morgan is currently writing a book about what he feels were government excesses with radiation testing in that period.

Full-scale program

The testing at Dugway was not just a few isolated experiments, but was part of a full-scale radiological warfare program designed to test the feasibility of using "products from the atomic pile to produce death or casualties in man, animals and plants."

Because such a program "requires large areas and isolation from human habitation for test security reasons and because of the extreme hazards involved," the Army chose Dugway and the then-adjoining Wendover Air Force Base as its home "after an extensive survey and study of field test sites."

Documents said much of the chemical and biological work already under way at Dugway would blend nicely with radiation weapons work, and "therefore some personnel may be used for work in all three fields."

Of note, 12,000 open-air chemical tests would be conducted at Dugway in the 1950s and '60s, as would about 2,500 germ warfare tests that have been revealed. That was on top of the radiological tests.

In 1949, documents said the radiation warfare program at Dugway included 190 people, and had a budget that year for construction alone of $1.6 million.

Documents suggest that testing

Please see **RADIATE** *on A11*

RADIATE

Continued from A10

may have occurred at several places around Dugway, but the only one specifically named is a site near Wig Mountain. Officials thought it was too small and recommended against using it.

Officials had recommended using tests sites for a year and then letting them sit dormant for two years before using them again — which it said would allow radiation intensity from leftover tantalum to decrease by a factor of 64. Morgan said the half-life of tantalum 182 is a relatively short 115 days.

Targets cities too

Documents show the program was not just developing radiological weapons for battlefield use but also for possible use against cities.

Officials complained in one document, for example: "There is no terrain at Dugway which reasonably simulates the cities and built-up areas of the targets on which RW (radiological warfare) might be used."

Another document said that might be overcome by a possible test attack or two "of a built-up area in the Savannah River region" around Georgia.

Truman said, "We (Downwinders) sought documents about radiation warfare for years, but all we got was outright denials or statements saying they couldn't find any documents about it."

How many tests?

New documents released to the Deseret News plus information earlier released by the General Accounting Office identify 31 specific radiological weapons tests from 1949 to 1952. But Deseret News documents suggest more than 600 may have occurred in the period, and that testing may have continued for years afterward.

A document describing six tests planned in 1951 notes they were numbered "Field Tests 619-624," which suggests 618 other field tests had already occurred. It is unclear whether the number referred to radiation tests alone, or a mixture of radiation, chemical and biological warfare tests.

Documents also said testing was planned through at least 1954, and maybe beyond. Also in previous years, the Deseret News obtained documents about germ and biological testing that mentioned some radiological tests planned later in the 1950s and '60s.

For example, earlier obtained documents from the old Army Chemical Corps said that in 1957, a study on the "feasibility of rapid aerial surveys of large-scale radiological contamination" was undertaken. To do that, it contaminated areas "1,500 yards long and 100 yards wide, in which 4,000 curies of cobalt 60 had been placed in source wells."

The same report even said radiological weapons had major advantages over chemical and germ weapons because they "(were) less affected by meteorological conditions, produced longer periods of denial and (were) less subject to personnel protective measures."

Other documents mentioned that radiological warfare tests were conducted at Dugway from 1960 to 1962, in part to scrutinize shielding methods during a moratorium on open-air nuclear bomb tests. When the bomb tests resumed, those radiological shielding tests at Dugway seem to have been discontinued.

Previously obtained documents mention that an interesting part of radiological weapon research in 1962 included looking at "the possibility of developing a ray gun weapon employing a linear electron accelerator." A contract for such research was given to General Electric.

Questions about how many tests occurred and for how long were directed to Dugway, which deferred to the Chemical and Biological Defense Command, which deferred to Army headquarters, which deferred to the Defense Department.

Its spokesman, Potter, said a response would require research that could not be completed in the immediate future.

One person who believes the Army conducted hundreds of radiological tests is Truman with the Downwinders.

"That's because we continually have received calls and heard rumors through the years that the government tested atomic bombs at Dugway," he said.

"I don't believe that. They couldn't have gotten away with that. Too many people would have noticed, and our research has never shown anything like that happened . . . But maybe people heard friends talking about radiological weapons. And radiation translated into nuclear bomb tests in their minds," he said.

What now?

Truman said he hopes revelation of the new tests will galvanize Utahns into seeking a full accounting of all tests at Dugway through the years and and an assessment of the risk they posed.

"What else did they do? How much ground is contaminated out there?" he asked. "Maybe it's time that glasnost applied to Dugway and we get an inventory of what all they did do out there."

Morgan said, "I think it's been clearly established that Dugway did many things it knew were dangerous at the time and which we know today could be disastrous."

He added, "Much of this might have been acceptable in a war when you were facing someone like a Hitler . . . But afterwards, the Army was using propaganda more than facts to spend money on its tests."

Radiation weapons tests in Utah

SPECIFIC TESTS REVEALED TO DATE

Oct. 22, 1949 — (Previously disclosed by U.S. General Accounting Office.) A 2,000-pound cluster bomb full of radioactive tantalum metal and the explosive tritonal contaminated an area 0.6 square miles at Dugway Proving Ground. **Radiation released: not available.**

Nov. 30, 1949 — (Previously disclosed by GAO.) A 2,000-pound cluster bomb full of a radioactive tantalum isotope contaminated an area 0.8 square miles in size. **Radiation released: not available.**

Aug. 3, 1950 — A cluster bomb with tantalum and TNT was exploded about 800 feet above ground after being dropped from 20,000 feet. Designers believed powerful TNT would break up the tantalum into smaller particles that could spread farther. **Radiation released: 1,500 curies (1,000 times the amount released by the Three Mile Island nuclear reactor accident).**

Aug. 5, 1950 — Another variation of a cluster bomb with tantalum and an explosive called "composition B" was exploded 800 feet above ground. Designers thought that powerful explosive might also break up tantalum into smaller particles for wider dissemination. **Radiation released: 1,500 curies.**

Aug. 10-25, 1950 — Four tests exploded different shapes of radioactive metal to see which would best spread contamination. The best shapes would later be used in cluster bombs. **Each test was estimated to release 100 curies of radiation.**

Sept. 5, 1950 — (Existence of test previously disclosed, but no details.) A cluster bomb filled with tantalum and the explosive tritonal was exploded. It included a "cooling jacket" that "may be required in order to dissipate the large amounts of heat which will be generated in a RW (radiation weapon) munition at megacurie (1 million curie) levels." Designers wanted to see what effect the cooling jacket would have on how much area was contaminated. **Radiation released: 1,500 curies.**

Sept. 8, 1950 — (Existence of test previously disclosed, but no details.) A cluster bomb filled with tantalum and the explosive amatol released 7,500 curies. The amount of radiation was increased so "the operating personnel may gain experience in handling radioactive materials at a level intermediate between the 1,500 curie level of previous tests and the 30,000 curie level required for the heat transfer studies."

Sept. 11-16, 1950 — Small dust generators that spread radioactive specks were tested in 15 experiments. Ten disseminated radioactive tantalum pentoxide in unspecified, controlled particle sizes. Three disseminated tantalum pentachloride in uncontrolled sizes. Two disseminated a fused mixture of tantalum pentoxide and various compounds of potassium and silicon. **Radiation released: not available.**

November 1950 — A "heat transfer" study exploded 30,000 curies of tantalum in a cluster bomb to study "the problem involved in the dissipation of the heat generated in an RW (radiation weapon) munition."

1951 — Documents show six tests were planned and approved and scheduled to begin in May. They would test new versions of cluster bombs; smaller spheres that would drop from planes, burst and spread radioactive pellets; and a system to spread radioactive pellets from hoppers in high-altitude aircraft. The U.S. General Accounting Office previously said it had data saying one test was conducted in November 1952 but had few details about it. **Radiation released: not available.**

May 1951 — The GAO said it had information that a radiation weapon test was conducted in that month but had few details about it. **Radiation released: not available.**

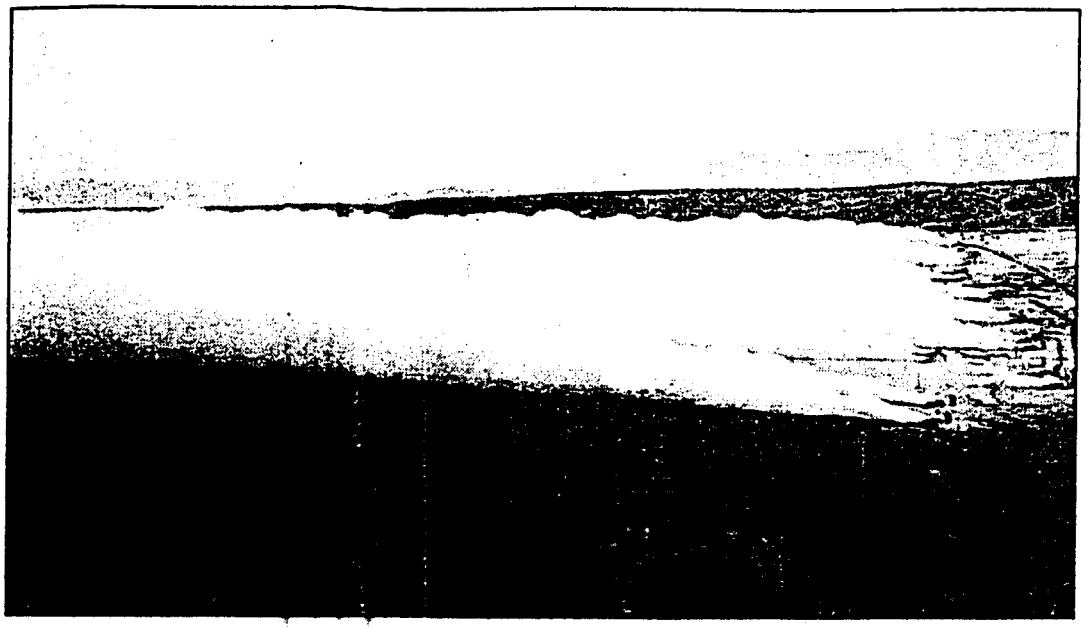
*** Documents obtained by the Deseret News suggest that more than 600 tests may have occurred. The Pentagon said it cannot confirm or deny that without much more research and said the newspaper's request for such information is in line behind dozens of other requests — so more information may not be coming soon.*

METRO

Salt Lake / Davis / Utah counties

SUNDAY, JUNE 5, 1994

E CITY • HOLLADAY-COTTONWOOD • WEST VALLEY • SANDY • WEST JORDAN • AMERICAN FORK • OREM • PROVO • SPRINGVILLE



Streams of mist pour across the plain during open-air tests of chemical warfare agents at Dugway.

Lethal breeze

By Lee Davidson
Deseret News correspondent

SUNDAY EXTRA

WASHINGTON — In decades of secret chemical arms tests, the Army released into Utah winds more than a half-million pounds of deadly nerve agents.

A pinhead-size drop of the nerve agent VX on one's skin, weighing seven-millionths of a pound, can be lethal — meaning the Army spread enough outdoors in Utah to make 3.5 trillion such potentially deadly drops.

Most of the nerve gas was likely contained inside the Rhode Island-size Dugway Proving Ground — but evidence suggests some may have escaped with the wind.

Such experiments occurred amid hundreds of other Utah tests with germ and radiation weapons — meaning Utah may not have been a very healthy place during the Cold War.

The chemical arms data is disclosed through documents just obtained by the Deseret News through a Freedom of Information Act request.

The information contained in the documents is the first to show Army estimates of just how many open-air nerve-agent tests occurred at Dugway and how much nerve agent was released.

Please see **TESTS** *on B2*

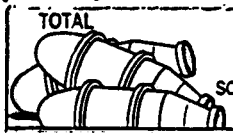
Nerve agent testing

1951-1969

Amount of nerve agent used in secret chemical arms tests conducted at Dugway Proving Ground, Utah.

*NOTE: A pinhead-size drop of nerve agent VX may be lethal.

MUNITION	NUMBER OF OPEN-AIR TRIALS GB	GA	VX	NUMBER OF ARMS USED	TOTAL POUNDS OF NERVE AGENT USED
Aerial spray tanks	26	8	13	N/A	53,700
Projectiles	458	-	93	10,570	41,200
Land mines	-	-	14	14	900
Bomblets	175	-	-	175	1,100
Bombs	123	-	-	137	24,100
Rockets	53	-	85	629	8,200
Missiles	6	-	-	11	1,400
Aerosol generator	60	-	-	N/A	1,000
Disposal operations	52	-	-	38,824	362,100
Other defensive tests	69	-	-	N/A	1,000
Weekly demonstrations	400	-	-	4,800	N/A
TOTAL	1,422	8	205	55,160	494,700



SOURCE: Army documents

NEWSLINE

3 women drivers report separate abductions

A Millcreek woman told police she was kidnapped in her car at knifepoint by five men and raped repeatedly Friday — marking the third reported carjacking in the Salt Lake area this week.

The woman, 36, was waiting at a red light at 1300 S. State about 9:30 p.m. when a man stepped into her unlocked vehicle, brandished a knife and ordered her to keep driving, according to a Salt Lake police report.

As the light turned green, four more men jumped into her car.

The woman said she was then directed to an unknown location where she was blindfolded and her hands bound with wire.

The men then allegedly threw her into the back seat of a different car and traveled to another unidentified spot where she was raped and assaulted, the report said.

Afterward, she was released near the Salvation Army parking lot at 300 S. 400 West.

The woman, who said she is a corrections employee, told police one of the men may have been a former prison inmate because he said "this is what you get, this is what you deserve for working where you work."

No arrests have been made. An investigation is pending, said Salt Lake Police Lt. John Hodson.

Also, a Taylorsville woman told police she was kidnapped Friday by a man hiding in the back of her car.

The woman, 23, was traveling south on I-15 about 11 p.m. when the man surprised her and ordered her to go west on I-215, according to a police report.

After driving to the area of 6200 S. 3200 West, the man instructed the woman to drive east to a parking lot near 2800 E. 3900 South. The man then got out of the vehicle and walked away.

The woman told a Salt Lake County sheriff's deputy she had also been sexually assaulted during the abduction, the report said.

Wednesday, two teens forced a West Valley woman into the back of her car and

A crewman in a protective suit uses a safety shower in 1964.

Ill Dugway retirees have tough time finding relevant medical records.

By Matthew S. Brown
Deseret News staff writer

TOOELE — It was not a pleasant reunion. The host had his oxygen tank and medication handy, in case his heart beat out of control. One guest arrived in a wheelchair, crippled by a neurological disorder. And another showed up explaining how he suffers from lymph nodes swelling in hot weather.

"I could have cried," recalled Jean Hulet upon seeing her husband's former friends at the meeting of Dugway Proving Ground retirees. Her spouse died about 20 years ago of cancer. "I knew those men when they were 30 years old. To think the military would do that to their employees."

No one is certain whether military testing inflicted health problems and death on former Dugway workers. But the group of retired civilian test workers and their families who met inApril would like to find out.

Futile search

But so far their search for

Please see **DUGWAY** *on B2*

VOLUNTEERS

Army tested LSD on humans as weapon

A once-classified U.S. Chemical Corps history, obtained by the Deseret News through a Freedom of Information Act request, reveal the Army used humans to test the drug LSD as a possible weapon.

The history leaves unclear whether the LSD testing occurred at Dugway or another Army facility.

It says that in 1956, "the Army approved a corps plan to ascertain the effects of K-agents (chemicals including LSD) on human volunteers. . . .

"One of the most interesting investigations was carried out to see if the drug (LSD) would affect a squad of men who were undergoing routine training. First the squad was given the drug. The leader, however, did not receive the compound.

"The men paid little attention to their leader's commands. Their motions were slow, they were quite happy and unconcerned with the leader's attempt to drill them.

"In the second experiment, the squad leader as well as the men received the drug. When an officer told the leader to drill the men, he refused and told the officer to do it himself. The entire group laughed and joked. When the officer told the squad leader to leave the field, he refused and had to be escorted away."

TESTS

Continued from B1

Exact numbers

The documents list 1,635 field trials or demonstrations with nerve agents VX, GA and GB between 1951 and 1969 — when the Army discontinued use of actual nerve agents in open-air tests after escaped nerve gas apparently killed 6,000 sheep in Skull Valley.

Open-air tests using less dangerous simulants continued afterward, although some say the simulants are also dangerous.

The open-air trials of real nerve agent used 55,160 chemical rockets, artillery shells, bombs and land mines at Dugway.

Those munitions — plus tests of airplane spray tanks, protective gear and early disposal methods — used at least 494,700 pounds of nerve agent, according to a summary of the tests the Army prepared in 1971.

But that does not include the amount used in what documents estimated were 400 demonstrations of nerve agent weapons that occurred almost weekly for 10 years for a Dugway chemical school — which could add thousands of pounds to the total.

Did some of agent escape?

Documents raise questions about whether agent escaped from the base during tests, and — if so — how much.

The strongest case showing some likely did was a March 13, 1968, test in which a F-4E Phantom streaked around Dugway at 500 knots an hour, dropping 2,730 pounds of agent VX at 200 to 500 feet above ground level at a target near Granite Mountain.

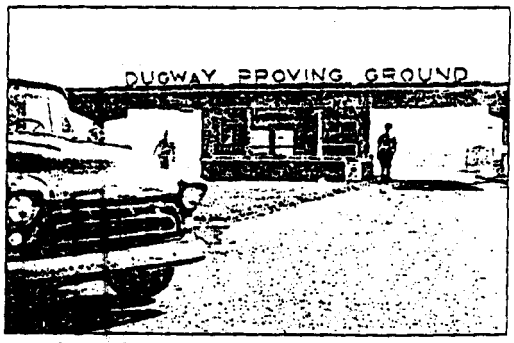
"It was estimated that 44 to 73 percent of the agent fill was deposited within one mile of the release line," an Army summary said.

That, of course, means 27-56 percent of the agent also traveled farther than the mile downwind where monitors tracked it. And the next day, 6,000 sheep began dying 25 miles downwind in Skull Valley outside the Dugway base boundaries.

The Army never admitted fault in the mysterious sheep deaths but paid $1 million in restitution. Until now, it had never even openly said VX was the agent used in tests that day — although outside scientists assumed it was.

The nerve agent VX is "so toxic that 3-4 milligrams (a drop the size of pinhead) on the bare skin may cause death," Army documents state. In the air, they say the "median lethal dosage" is 100 milligrams per minute per cubic meter. GB has the same "median lethal dosage" in the air, but documents do not list how lethal it is to the touch.

Documents further state that VX may act in as little as 15 minutes or take as long as two hours. "It evaporates so slowly that it remains on the ground for days, making the area extremely dan-



The main gate of Dugway Proving Ground, as seen in 1958.

the compounds 'V-agents' because of their venomous nature."

As a Deseret News probe last year also said, the sheep-kill incident may have hurt humans too — although the Army denies it.

Ray Peck, who was outside working on a Skull Valley ranch during the May 13, 1968, incident, and members of his family developed nervous-system illnesses for years afterwards, similar to ills reported by people exposed to low levels of VX in lab experiments.

Also, the probe showed that medical tests the Army had used to claim humans were not affected are now considered inconclusive, and the Pecks had showed other signs of low-level VX exposure.

Other possible escapes

Similar to the sheep-kill incident, several other tests had large percentages of nerve agent float beyond test grids — but that does not necessarily mean they went beyond Dugway borders.

One test almost totally missed its target grid.

"On Trial D-1, the major portion of the pattern was deposited before the aircraft was over the sampling grid," a document says about an April 18, 1962, test with 203 pounds of VX dropped from an aircraft drone.

Lists show four other aircraft spray tests that had agent recovery rates lower than the 44 percent low-end range mentioned for the "sheep kill" test — but recovery rates are not mentioned for most tests.

They are:

- A Sept. 13, 1962, test that dropped 2,800 pounds of VX, but only 4 percent of the VX reached the ground in the test grid area.
- An identical test on Aug. 9, 1962, that listed an 11 percent recovery rate.
- A Sept. 14, 1962, test with a 24 percent recovery rate.
- A May 22, 1962, test with 662 pounds of VX that had a 34.3 percent recovery rate.

Besides aircraft spray tests, trials with other types of munitions often had relatively low recovery rates of nerve agent on test grids too.

For example, tests for 155 mm artillery shells had recovery rates

Some arms tests occurred even in high wind. A report of a March 1964 test of a VX artillery shell said, "although this test was a high-wind speed trial (21 mph at 50 feet), the agent recovery within the target area was approximately 40 percent."

And some bomb tests came from high altitude. For example, tests of a 750-pound bomb at Dugway and Eglin Air Force Base with nerve agent GB were dropped "from altitudes of 40,000 feet at speeds of 450 knots" although they exploded on the ground or at low altitude.

Most tests spread nerve agent at relatively low altitudes, and some tests had up to 100 percent recovery on test grids.

Demonstrating death

Some of the testing was designed solely to impress military officials and others with how deadly chemical arms are.

From September 1959 to June 1969, Dugway was the site of a Chemical-Biological-Radiological Weapons Orientation Course for the military and the Central Intelligence Agency. It was held 40 weeks a year for those 10 years.

For each session, the Army conducted "a demonstration in which 12 M121A1 GB projectiles were fired to impact within a target area instrumented with chemical sampling."

Documents add, "The reactions of various laboratory animal species located in fortifications were observed via closed circuit television."

Watching such animals die apparently made an impression. A Chemical Corps history said, "Some officers of flag rank called it the best Department of Army school they had ever attended."

Previously obtained documents said one such demonstration also occurred the day before the mysterious sheep deaths in 1968.

Tests on humans?

Most open-air trials were designed to test new weapon systems. But 154 "trials have been conducted at Dugway to determine the hazard to personnel in the immediate area or downwind of aircraft accidents, decontamination operations and munition disposal opera-

A worker uses a dummy to show how a child would be placed in a covering for protection from lethal gas.

posed.

- At least five trials to study combat operations in an area contaminated with VX.
- At least six open-air field tests of protective overgarments that used live nerve agent.

Such documents suggest — but do not specifically say — that humans were involved in danger areas.

However, the Army was using human subjects in somewhat similar germ and drug tests conducted at the same time. An earlier Desert News probe showed the Army used volunteers in a 1954 open-air germ weapons test to see if a Q fever weapon could infect them. It did.

A different Deseret News probe also showed that as part of tests to see how germ warfare might disperse, the Army dropped toxic cadmium sulfide over cities throughout the East and over some public lands in Utah — even though tests showed for years that drop could be deadly.

Testing with simulants

Documents show 32 open-air trials using 93,500 pounds of simulants were used in the period.

One simulant often used was called BIS — which has continued to be used through the years. It was dangerous enough that recent Army documents said employees should use gas masks when exposed to its vapor.

Other simulants through the years caused controversy, including some this year on the chemical dimethyl methylphosphonate.

The Senate Veterans Affairs Committee heard testimony from Earl P. Davenport of Tooele, a former Dugway worker, how he has been sick with respiratory and heart problems ever since he was accidentally sprayed with it.

The Army had quit using it in open-air tests after it found the chemical may cause cancer.

Defending the nation

Documents show the Army believed testing was protecting soldiers and the nation against

ing this battle, the Army might have increased testing at Dugway.

For example, a once-secret report from 1958 — when Army officials were worried about lack of funding — said, "The cold, brutal fact is that despite the (Chemical) Corps' efforts, we are little more prepared for chemical and biological warfare in 1958 than we were in 1950.

"More alarming, based on the best available intelligence, there i every indication to believe that ou CBR (chemical-biological-radiological) capabilities are rapidly be coming inferior to the enemy, wh appears to be ever increasing his emphasis in this area," it said.

The Army's efforts were at leas partially successful. Chemical wa fare was never used by an enemy against the United States during the Cold War.

However, the weapons developed from the tests are all soon to be destroyed nationwide, as ordered by Congress because they are aging and deteriorating. Penta

DUGWAY

Continued from B1

clues has turned up little or nothing. The military either lost their files or never made a record of their experiences at Dugway.

"When I was working out there, I felt they took pretty good care of us. But evidently they didn't," said Gerald Vowles, who worked at Dugway from 1952 to 1985, and has been unable to walk the past three years because of a multiple sclerosis-type disease for which his physicians can't find an exact cause.

After several months of requests and after enlisting the help of his state legislator, Vowles finally received a medical file from Dugway. But there was one problem. "They said from 1955 to 1972 there is nothing in my record. Everything was gone," Vowles said. It was during that time that Vowles was vaccinated against the deadly doses of biological agents and nerve gas he would be exposed to while washing down testing equipment.

"Some of those shots made me sick," he said.

His concerns are similar to those aired recently by Persian Gulf veterans, who claim the Army's experimental vaccinations or enemy chemical weapons have brought on a variety of mysterious illnesses collectively known as gulf war syndrome.

Howard Yerke was inoculated against Q-fever in 1969 before he worked on a test using the germs carrying the deadly disease. But two weeks later his arm swelled to the point that he couldn't put his shirt on. After Dugway doctors lanced the wound, it took six months to drain.

"I have records saying I received a classified shot, but to this day they have never told me what it was," said Yerke, whose underarm glands swell in hot weather. "I was told unofficially by the doctor who lanced it that it was Q-fever and if I got another (shot of it) it would probably kill me."

Bunker and gun revetments were bombarded, then studied in tests.

Stolen files?

Jeanne Hulet tried in vain to get workers' compensation after her husband's cancer death. Dean Hulet worked extensively with a cancer-causing decontaminant at Dugway. But his medical records mysteriously disappeared from his private physician's office. His widow and his former doctor still believe someone from the Army stole the file to cover up its widespread use of the decontaminant.

"I have no other explanation," said Dr. Alan P. Macfarlane, now retired and living in Salt Lake. "Maybe they bribed an employee" to destroy Hulet's records, he said.

One Dugway retiree who copied his files before he retired was Earl Davenport. He was sprayed in the face with a nerve agent simulant, which the Army has since stopped using after research showed it could cause cancer. Davenport said his health declined rapidly since the accident, forcing him to take early retirement.

But poor documentation of the accident, of past inoculations and exposures to small doses of other chemical and biological agents has resulted in the Department of Labor denying his compensation claim.

Breaking silence

For what the Army says are security precautions, Dugway workers never talk about their work. And these retirees have obediently remained mum until recently. Davenport broke the code of silence a few weeks ago when he spoke to the Deseret News. Most recently he testified before a congressional committee, investigating similar experiences among Persian Gulf veterans who became ill after receiving vaccinations against enemy chemical agents and later found no records of the inoculations.

After the Deseret News published Davenport's story in April, he said several former colleagues called him to express similar troubles. They gathered at Davenport's home in April to discuss their problems.

"I felt healthy after seeing those guys at my house. It was sad," recalled Davenport, who suffers heart and lung problems. As they shared their problems they came up with a list of names of 29 former workers who were ill or had died.

Their stories have been aired on ABC News and Davenport said another national network has contacted him. They plan to keep talking to anyone who will listen, hoping the government takes notice and helps piece together a medical history that may determine what health problems were caused by work at Dugway.

"It's not that we want to get rich, but if I am having a problem I would like them to help me," said Yerke.

No records, no help

Without adequate records of the shots workers received or dosages they were exposed to during tests, physicians can't verify workers' compensation claims. "The medical opinion is the deciding factor because we look at cause-and-effect relationship" in determining a claim, said Tom O'Melia, acting director with Department of Labor's regional office in Denver. "The more information an employee can gather, the better his chances are."

Dugway officials say they can't speak for past record-keeping practices, but spokeswoman Melynda Petrie said military inspectors regularly check the files now at the remote post in Utah's west desert to ensure they are accurate, current and complete.

"There is no situation where information is withheld from an employee," she said, referring to charges by some retirees that Dugway stonewalls and deliberately delays requests for old records. "We respect anyone's right to information. We don't necessarily believe their claims, but we certainly try to help."

But Petrie acknowledged retired workers will run into problems on old records. She explained that she understood a fire destroyed many older files stored in a large government warehouse in St. Louis. And if the fire doesn't stymie the request, the seemingly interminable wait for records will.

"It's a very time-consuming and not always productive exercise to get their files from St. Louis," she said.

Records not enough

Documenting exposures to actual agents and simulants, however, is just part of the problem retirees face in proving work at Dugway caused their illnesses, said Dr. Creed Wait.

Wait, a Tooele internist who has seen up to 100 patients who have worked either at Dugway or the chemical arms storage complex at Tooele Army Depot, said he has studied the health affects of nerve agents, attended seminars and talked with military physicians, searching for clues to Vowles' and other patients' ailments.

"The Army has done very careful testing on long-term effects to single exposures to nerve agents," he said. "But the question of whether or not there is significant consequence of multiple smaller exposures has not been examined as carefully.

"There is a possibility that some individuals may have significant medical consequences to multiple small exposures to toxic nerve agents, but basically the answer to this question isn't known."

He said exposure to small doses of agent appears to affect a minority of patients. Why some are affected and others are not is not known. "I'll have a 75-year-old retiree come in and he's as strong as a horse. Then another will be ill. The answer to that is tough," Wait said.

But the question shouldn't be ignored, he said.

"It wouldn't be overly difficult for (the government) to give a retrospective review of employees who worked with nerve agents over the past 30 years," he said.

No such research is being done, said Lt. Col. Jeff Davies of the Army's Medical Research, Development, Acquisition and Logistics command.

But he noted that bids are being accepted for research into the human health effects of low-level exposure of chemical and biological agents. Congress has set aside $1.2 million for the study, which will focus on the possible use of chemical and biological warfare agents on allied troops in the Persian Gulf War.

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To Steve H	From PA	
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Phone #	Phone # 2116	
Fax # 2397	Fax # 3274	

Corrections, clarifications

Dugway Proving Ground spokeswoman Melynda Petrie clarified cutline information published with a photo on B1 in Sunday's Deseret News. The photo is of a smoke-obscurant test. The nontoxic smoke is used to conceal the movement of troops on the battlefield, she said.

Dugway to Study '50s Reports on Chemical Sprays

THE ASSOCIATED PRESS

Tests gathered during biological warfare research in 1957 by 63 Civil Aeronautics Authority stations and 112 weather-service offices on air-sampling equipment were mailed to the Army's Dugway Research Center in Utah for analysis, according to documents.

These documents show that the U.S. Army sprayed portions of western and northern Minnesota with chemicals from an aircraft in late 1957 as part of Cold War-era biological warfare research.

Part of Operation Large Area Coverage, which attempted to monitor chemical dispersion over most of the United States east of the Rocky Mountains, the test spraying in northern Minnesota occurred on Dec. 2, 1957, when a C-119 "flying boxcar" flew from an unspecified location in South Dakota to International Falls, according to a 35-year-old report obtained by the Minneapolis *Star Tribune*.

The plane dispersed "myriad microscopic particles" of zinc cadmium sulfide along the way in an effort to measure the distance and direction that the particles would travel in the wind.

The spraying is mentioned in a 1959 "Summary of Major Events and Problems" of the U.S. Army Chemical Corps. The 1957 experiment apparently was not successful; since the report notes that a Canadian cold air mass shifted directions and carried the bulk of the chemicals into Canada.

"The test was incomplete," the report says, "but it was partially successful since some stations 1,200 miles away in New York state detected the particles." Test results were collected and quantified at Dugway where the test filters were examined.

The Army used zinc cadmium sulfide in the experiment because its fluorescent particles could be counted and measured to determine air flow patterns. The behavior of aerosol clouds in and across populated areas was an important question for military scientists involved with chemical and biological warfare research.

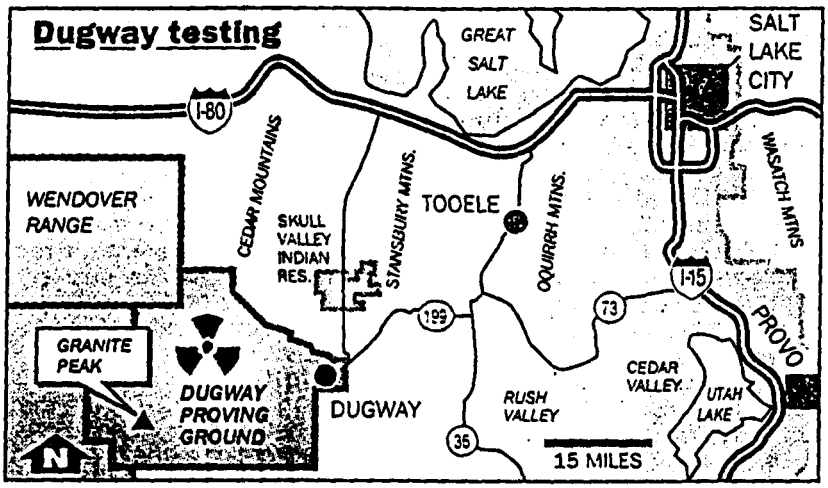
Army scientists said Friday that no health threat was created.

Exposure was well within standards set by the Occupational Safety and Health Administration and the Environmental Protection Agency, the scientists said.

In high doses, cadmium can cause cancer and damage lungs and kidneys, but the risk to pregnant women is unclear, an Army study said.

The International Agency for Research on Cancer indicated earlier this year that it now considers all cadmium compounds to be human carcinogens.

Other areas where secret testing was conducted during the 1950s and 1960s included the St. Paul suburb of Rosemount; the Chippewa National Forest in northern Minnesota; Winnipeg, Manitoba, in Canada; the San Francisco Bay area; and areas identified only as north central Texas, east of the Rocky Mountains, and the Georgia and South Carolina coasts.



EXPERIMENTS

At least 68 Dugway tests involved radioactive dust

Documents show Army conducted 35 more trials than previously disclosed.

By Lee Davidson
Deseret News Washington correspondent

WASHINGTON — In Utah in the 1950s, the Army conducted 35 more open-air trials than previously disclosed of munitions that scattered radioactive dust to the wind. That brings the publicly known total of such tests to 68.

That's according to a Deseret News evaluation of documents given this week to Rep. Karen Shepherd, D-Utah, and Sen. Bob Bennett, R-Utah, by Col. James R. King, commander of Dugway Proving Ground.

Shepherd and Bennett requested documents about such trials after the Deseret News revealed in April that the Army had conducted at least 33 of them between 1949 and 1951 at Dugway. That was 27 more than the six originally found by the U.S. General Accounting Office in a December report.

President Clinton has already asked a special commission he formed to look at the safety and ethics of Cold War radiation experiments to specifically review the Dugway radiological testing program.

Dugway provided about 1,000 pages of new documents about such testing this week, but Shepherd says that is only a very small tip of the whole iceberg of docu-

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DUGWAY

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ments she wants made public.

"I was a little surprised by getting the documents. First, we were told they had a whole room full of documents and it would take months or years to process them," she said. "Then suddenly we get this pile about four inches thick."

She said she also is pushing for release of documents on the thousands of open-air germ- and chemical-warfare experiments conducted at Dugway during the Cold War and is considering forming an advisory panel of local scientists and citizens to review the documents and give opinions about threats faced.

Bennett did not want to release his copies of the documents yet, saying, "Before jumping to premature conclusions, which may create unnecessary panic, it is imperative that the raw data first be analyzed by qualified, scientific experts."

He said he is awaiting analysis by Pentagon experts and hopes to work with Gov. Mike Leavitt to select such experts on a panel not connected with the Defense Department.

New tests

The heretofore unknown radiological trials at Dugway all occurred in 1951 and 1952, according to copies of the newly released documents provided by Shepherd.

They included four trials on May 29, 1951, of different shapes of radioactive munitions exploded atop 50-foot poles to see which would best spread contamination. Only one such test at that time had been hinted at in previous documents.

Also, nine trials occurred on Nov. 3-4, 1951, of small 3-inch spherical munitions — which were somewhat like radioactive-dust grenades — that were dropped from airplanes at altitudes up to 5,760 feet above ground and exploded in high winds of up to 38 miles per hour. One was accidentally released in the wrong place, and several failed to explode and were never recovered.

Previous documents said at least one such trial was planned, but nine occurred.

On Nov. 7-8, 1951, the Army dropped two 1,000-pound cluster bombs full of radioactive tantalum-128 pellets, which quickly disintegrate into dust upon explosion. Previous documents said at least one such drop was planned, but two occurred.

Four other until-now-unknown trials occurred on May 20, 1952. Dugway exploded from 50-foot poles four differently shaped munitions to see which would best scatter radioactive dust. One released 388.5 curies of radiation (26 times more than the infamous Three Mile Island nuclear reactor accident).

On May 21-27, 1952, the Army conducted 16 more heretofore-unknown trials with the small ball-like dust generators dropped from airplanes. Only seven actually exploded, six were duds and three others were assumed to be duds and were not recovered.

And on Sept. 23, 1952, the Army conducted heretofore-unknown trials with five munitions hung from 50-foot poles. Three malfunctioned and were essentially duds.

Documents also mentioned tests on how to clean up contaminated areas in the summers of 1950 and 1952, which experimented in picking up radioactive pellets or trying to till them under. Dugway dug a 70-by-70-foot pit 3 feet deep to bury much of the contamination it cleaned up from grids.

New data on old tests

The new documents are detailed technical reports that include a vast amount of data on munitions size, weather conditions and procedures, which should help experts evaluate them.

Previous documents often consisted only of letters mentioning tests and dates or were plans for tests that did not report what exactly happened or whether tests actually occurred.

The new documents show some tests occurred a day or two later than earlier thought and likely involved much lower levels of radiation than other documents said.

For example, one cluster-bomb drop occurred on Aug. 4, 1950 (instead of Aug. 3 as previous documents had planned) and released 480 curies (32 times more than Three Mile Island). But that was much less than the 1,500 curies other documents predicted.

The documents also reveal for the first time that the tests were all conducted around Granite Peak at Dugway at a series of eight grids.

The documents also showed that most tests used tantalum-182, which was made by putting nonradioactive tantalum-182 into nuclear reactors at Oak Ridge National Laboratory until they captured an extra neutron.

Documents said tantalum was selected because it could be made into pellets that would fly far upon explosion but often disintegrate into dust, which made decontamination difficult.

Also, documents said it had "a fairly long half-life (120 days) and thus (is) desirable for long periods of area denial" — not allowing troops to enter contaminated areas for weeks.

Documents said most radiation was contained on test areas, estimating that usually no more than 1 percent may have floated away from the areas. But it did say some tests occurred in high winds and at high altitudes.

A few accidents also occurred, dropping munitions off target. In one, a bombardier targeted the wrong grid at Dugway. In another, a munition was dropped early because of "a crew member in the bay accidently catching the release mechanism on his parachute." Officials never found that munition or the area it contaminated if it exploded.

The newly released documents did not mention some tests listed by previous documents. That includes some cluster-bomb tests on Oct. 22 and Nov. 30, 1949, and in November 1950. They also do not mention plans that had called for dropping radioactive pellets from hoppers in high-altitude airplanes.

Shepherd said she hopes experts can assess any dangers the tests presented. And she said they are worrisome, especially after events such as when wildfires in Tooele County blanketed Salt Lake County with smoke because of winds.

"I have received dozens of calls in recent months from constituents who fear they were unwilling exposed," she said. "I hope these documents will provide us with a first public glimpse of the legacy Utahns have lived with as a result of military testing during the Cold War."

Army details Utah radiation tests

Specific radiation weapons tests revealed so far (with dates of tests disclosed this week in bold face):

Oct. 22, 1949 — A 2,000-pound cluster bomb full of radioactive tantalum contaminated 0.6 square miles at Dugway Proving Ground.

Nov. 30, 1949 — Another 2,000-pound cluster bomb contaminated 0.8 square miles.

Aug. 4, 1950 — A cluster bomb with tantalum was exploded 1,450 feet above the ground, releasing 480 curies of radiation and contaminating 1.7 square miles on the test grid. Sixty-nine percent of radiation released was not accounted for by grid monitors.

Aug. 6, 1950 — A cluster bomb with tantalum was dropped, but on the wrong target by error of a bombadier. It was supposed to explode in the air, but did not until it hit the ground. It contaminated 0.89 square miles on the test grid — but some contamination might have spread "indefinitely" in some directions.

Aug. 11, 1950 — Four tests exploded different shapes of radioactive munitions on 50-foot poles to see which would best spread contamination.

Sept. 5, 1950 — A cluster bomb filled with tantalum exploded at a height of 1,680 feet, releasing 930 curies and contaminating 2 square miles of the test grid. Sixty-two percent of expected radiation was not accounted for by monitors on grid.

Sept. 7, 1950 — A cluster bomb filled with tantalum was exploded at a height of 2,000 feet, releasing 3,900 curies and contaminating 3.2 square miles on the grid. Seventy-five percent of expected radiation was not accounted for by monitors on grid.

Sept. 13, 1950 — Fifteen tests occurred of small "dust generators" — something like radioactive-dust grenades. Some used radioactive tantalum, and some used radioactive "Agent RA." Each was filled with 1.1 curies of radiation. Most dust fell within 120 yards of munition, "and very little agent left the area in cloud form."

November 1950 — Plans called for a "heat transfer" study to explode 30,000 curies of tantalum in a cluster bomb to study "the problem involved in the dissipation of the heat generated in an RW (radiation weapon) munition."

Sometime in 1951 — Documents called for a test of a system to spread radioactive pellets from hoppers in high-altitude aircraft, but documents do not show if it actually happened.

May 29, 1951 — Four tests exploded different shapes of radioactive munitions on 50-foot poles to see which would best spread contamination. Only one such test had been hinted at in previous documents.

Nov. 3-4, 1951 — Nine tests were conducted with spherical radioactive dust generators dropped from airplanes, exploding as high as 5,760 feet above ground in winds of up to 38 miles an hour. Each sphere released between 8.5 and 17.8 curies. Earlier documents mentioned plans for one such test.

Nov. 7-8, 1951 — Two cluster bombs tested (previous reports only mentioned one). One on Nov. 7 was exploded at 1,700 feet above ground, releasing 612 curies and contaminating 1.05 square miles on the grid. Twenty-six percent of expected radiation was accounted for by monitors on the grid. One on Nov. 8 exploded at 1,050 feet above ground, releasing 756 curies and contaminating 1.22 square miles on the grid.

May 20, 1952 — Four tests exploded different shapes of radioactive munitions on 50-foot poles. They each released up to 388.5 curies and contaminated up to 0.33 square miles on the grid.

May 21-27, 1952 — Sixteen tests were conducted of "dust generator" spheres dropped from airplanes. Nine may have been duds and three were never located.

Sept. 23, 1952 — Five munitions in different shapes were tested on 50-foot poles. Three malfunctioned and were essentially duds.

November 1952 — A radiological weapons test of unknown type occurred, according to previous documents.

Army tested drug clouds over Utah

United Press International

WASHINGTON — The United States released powerful hallucinogenic drug clouds in Utah tests in 1964 to prove enemy soldiers could be incapacitated by inducing delirium, newly released documents show.

The Army documents were the second set recently made available that described germ- or chemical-warfare tests on human beings. Last Sunday, a San Francisco lawyer released Army documents that described tests conducted in 1950 in which a cloud of bacteria was sprayed over the San Francisco Bay area.

The drug-cloud documents, obtained under a Freedom of Information request, were made available by the American Citizens for Honesty in Government, a Church of Scientology group that opposes chemical-warfare testing.

According to the new documents, the Army project subjected eight enlisted male volunteers to open air doses of the hallucinogenic drug BZ in November 1964 at the Dugway Proving Grounds in Utah.

The documents said the volunteers experienced an increase in heart rate and blood pressure, increased blood flow (flushing), dry mouth, anorexia (loss of appetite), hyperactive peristaltic sounds, weakness or tightness in legs, blurred vision that "occurred early and persisted after recovery from all other effects," urinary frequency and urgency and nausea or vomiting.

Brian Anderson, a spokesman for the Scientology group, said that although the tests did not "blanket a city" his organization has been contacted by more than "three dozen individuals who underwent tests with BZ and related drugs and who are now complaining of after effects."

Anderson said BZ is 10-to-100 times more potent than LSD.

The Army previously acknowledged 362 people took part in BZ tests between 1960 and 1969, although details were not disclosed.

Military officials are satisfied the volunteer servicemen sustained no harmful lasting effects, a Defense Department spokesman said.

DEPARTMENT OF THE ARMY

OFFICE OF THE DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS

CHEMICAL AND NBC DEFENSE DIVISION
FORCE DEVELOPMENT DIRECTORATE

COMMAND	OFFICE SYMBOL	TELEPHONE NUMBER	FAX NUMBER
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REMARKS:
Re: Congressional Inquiry/Senator Wellstone

I'd greatly appreciate if your office send copies of the attached reports by Thursday morning (Federal Express) so our office can meet Senator Wellstone's request on time. I coordinated this action ~~through~~ through Ms Elaine Stanley

/s/ Demetrios Prapas

WELLSTONE
MINNESOTA

TOLL FREE NUMBER
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United States Senate

WASHINGTON, DC 20510-2303

COMMITTEES:
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July 27, 1994

The Honorable William J. Perry
Secretary of Defense
The Pentagon
Washington, D.C. 20301

Dear Secretary Perry:

As you know, your Department is in the process of acting on my request for documents relating to the spraying of zinc cadmium sulfide in Minneapolis and other U.S. cities during Army biological warfare testing in the 1950s and 1960s.

Many of the documents already supplied to my office include specific references to other documents regarding this testing. Army officials who met with me last month informed my staff that, as such references are encountered, they should be relayed to your Department to facilitate the records search.

Accordingly, a list of all references we have found to date is enclosed. These references are grouped according to the documents in which they were located. They are as complete as possible.

Also enclosed is a copy of a July 16 article from the Minneapolis Star Tribune which refers to "Operation LAC." I hope this article will help in the search for records relating to this particular test.

Thank you for your continued diligence in providing my office with these documents.

Sincerely,

Paul Wellstone

Paul David Wellstone
United States Senator

PDW:krb

cc: The Honorable Togo D. West Jr., Secretary of the Army

enclosures

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Minnesota
Public Domain
Biological Field Testing

Location of Test	Date of Test	DPG ACCN No.	Agent		Comments
Minneapolis	15 Jan-24 Mar 53	21725	FP*	C	Report obtained
Rosemont, MN	Sep-Oct 53	503 894	Lycopodium Spores & FP	S	Project "Corkscrew"
Chippewa National Forest, MN	Jan-Aug 64	518 945	FP	U	
South St. Paul,MN Stockyards	11 Jan 65	50602	Aerosol Deodorant	C	Report obtained
Morris, Waseca, Le Sueur, Crookston, Duluth & Rosemount, MN	May 53	500 672	TX**	C	DPG-"Prairie" DPGTR52
Rosemount, MN	June 55	528 683	TX	U	
Crookston, MN	June 56	501 363	TX	S	
Crookston, MN	1964	61032	TX	U	TR-107
Crookston, MN	1956-57	502 751	TX	C	TR-14 BWL 14
Rosemount, MN	1955,57,64	61033	TX	U	TR-109

* Fluorescent Particles (Zinc Cadmium Sulfide)
** Wheat Stem Rust (Anticrop agent)

DEFENSE DOCUMENTS

Referenced in "Behavior of Aerosol Clouds Within Cities," JQR 1 (page number in parentheses):

507 588	82p.	1.	Stanford proposal of May 1, 1952, with appendices. (p. 11).
503 615	8p.	2.	"Proving Ground Requirements of the Chemical Corps," Nolen Committee, 1949. (p. 14).
507 588		3.	Quarterly Reports, Contract DA-18-064-cml-1856, Stanford University, 1952. (p. 27).
537 636	195p.	4.	Bimonthly Reports, Contract W-18-035-cml-147, Stanford University, 1946. (p. 30).
507 449*	12p.	5.	Quarterly Reports, et seq., Contract DA-18-108-cml-450, Stanford University, 1950. (p. 30).
		6.	Special Report No. 1, et seq., Contract DA-19-064-cml-1856, Stanford University, 1952, CLIMATOLOGICAL STUDY OF TARGET AREAS: I. North American Climatological Analogues. (p. 32).
		7.	PROTOTYPE TARGET STUDY, The Ralph M. Parsons Company, Feb. 29, 1952. (p. 35).
11634	15p.	8.	Quarterly Reports, Contract DA-18-064-cml-450, Stanford University, 1950. (p. 41, Appendix A, Memorandum on Downwind Travel of Fluorescent Particles in the San Francisco Area, Prepared by Stanford University).

Referenced in 1980 Canadian study:

		9.	Grinnell, S.W., Perkins, W.A., Webster, F.X. and Leighton, P.A., Bimonthly Reports, Contract W-18-035-CWS-1256, Stanford University, 1946.
527 426	35p.	10.	Leighton, P.A., Quarterly Reports, Contract DA-48-007-CML-448 (Defense Document Center AD 248 607) 1960.

Referenced in Leighton, et al, "The Fluorescent Particle Atmospheric Tracer," Metronics Associates Inc., Palo Alto, Calif., reprinted from Journal of Applied Meteorology, Vol. 4, No. 3, 1965:

		11.	Cramer, H.E., et al., 1958a: The study of Diffusion of gases or aerosols in the lower atmosphere. AFCR-TR-58-239, AF19-(604)-1058, 69 pp. [Defense Documentation Center, AD 152 582.]
545 986 31145 545 988	295p. 220p. 673p.	12.	Cramer, H.E., et al., 1958b: Diffusion measurements during Operation Prairie Grass. Geophy. Res. Paper NO. 59, AFCR-TR-58-235(I), 57-201. [Defense Documentation Center, AD 152 572

*Classified.

572.]

13. Cramer, H.E., et al., 1953: The study of diffusion of gases or aerosols in the lower atmosphere. AFCR-TR-53-207, AF19-(604)-3460, 33 pp. [Defense Documentation Center, AD 210 482.]

500 700x 42p. 14. Vaughan, L.M., and W.A. Perkins, 1961: The washout of aerosol particles and gases by rain. Technical Report No. 86, Aerosol Labratory, Standford University. [Defense Documentation Center AD 249 877.]

532 623 50p. 15. Webster, F.X., 1963: Collection efficiency of the Rotored sampler. Technical Report No. 98, Metronics Associates, Inc., Palo Alto, Calif. [Defense Documentation Center, AD 418 597.]

Referenced in supporting documents supplied by the Army to Sen. Wellstone on 15 June 1994:

518 962x 92p. 16. Report HI-1093-D, particularly Appendix IV, "Toxicity Information on Fluorescent Materials," date unknown.

507 640x 100p. (17.) Ft. Detrick Special Report 162.

500 725x 159p. 532 704 49p. 18. Webster, F.X., Metronics Associates Inc., Stanford Industrial Park, Palo Alto, California, "The Fluorescent Particle Atmospheric Tracer Technique," pp. 48-80, ed. J.Y. Wang, (abstract of a paper presented at the Conference on Air Pollution in California held Oct. 30, 1967 at San Jose State College, California.)

2,027 pages

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[x] Scanned.

[O] Sen. Paul Wellstone and Demetrios Prapas have the circled documents in their collection.

dry dances, barbecues, vacation trips and even cruises sponsored by the recovery programs. You can sip "pop on tap" at the no-booze Camel Club, a dingy basement bar that attracts recovering addicts of all ages and races. The Dry Gulch, on St. Paul's West Seventh Street, is where recovering bikers get together. "The dry riders may look like a motorcycle gang," says St. Mary's Hauge, "but when you talk to one of them, he might say, 'Well, I'm continuing to take personal moral inventory of myself'."

Not all these step brothers and sisters want to mix just with their own kind. "Just because someone's sober doesn't mean he's not a jerk," says Terry Prem. Last year Prem, 30, and Nick Beavers, 30, former New York clubsters and drug addicts, opened Rogue, a dramatically decorated nightspot that serves alcohol. With tanks of slithering eels, it's probably the hippest bar in the upper Midwest. A third partner, bouncers and other staffers are also in recovery, but the patrons are, intentionally, a mixed crowd.

The drug-culture refugees have their own pioneers. Saul, 42, a former New York garment-industry representative who came to Minnesota 15 years ago, says he "helped inoculate Minnesotans" to the ways of New Yorkers. Now married to a native and the father of two children, Saul encouraged his drug-addicted sister Lisa to try Minnesota too. At first she didn't know what to make of "Minnesota nice." Accustomed to New York grouchiness, she says she kept wondering, "Why are all these people smiling at me?" Another culture shock: "Everybody takes your checks. I wanted to say, 'What are you people, crazy? I mean, you've got to be a bit more careful'."

Zing and values: If Minnesota has significantly transformed the New Yorkers, the transplants have also had an impact on the local culture. The recovering addicts in the Twin Cities are no longer seen by most natives as weird strangers but as members of their community who infuse it with both solid values and a little zing. Even "normies," as 12-steppers call the nonaddicted, hear a lot about "personal growth," and the Star-Tribune, the state's largest daily, publishes a weekly recovery column. It's reached the point, jokes Fran Jackson, publisher of the alternative recovery newspaper, The Phoenix, that some Minnesotans "feel shame about *not* having an addiction." Right, says Phoenix editor Rosanne Bane. "If you say you're not in recovery here, people just figure you're in denial."

JEAN SELIGMANN *with* LAURA BALLMAN *in Minnesota*

Fallout of an Invisible War

Science: New controversy over army germ testing

IN 1953, EARLY IN THE COLD WAR, U.S. Army workers arrived in a lower-middle-class neighborhood of Minneapolis with a set of small metal boxes. No one questioned their explanations about testing air-raid defenses—certainly not Carol Thomas, a first grader at Clinton School. Even after the births of her three boys years later—one learning-disabled, one a Down baby, another nicknamed "Mr. Bear" because he can't speak, but only roars—Thomas, now 46, never gave the boxes a thought. Nor did fellow alumna Diane Gorney, 50, though she was aware that, like her, many of her old schoolmates were unable to have children. "We used to joke that it was the water at Clinton," recalls Gorney. The joking ended in May, when a TV station contacted both women. The army's metal boxes, reporters told them, had been sampling the air for zinc cadmium sulfide, a mock biological-warfare agent the army had been spraying from a roof near the school. "As we found out more and more," says Gorney, "we started bawling our eyes out."

Zinc cadmium sulfide is one of four substances the army long ago admitted having sprayed over 239 sites to simulate covert biological attacks. Between 1949 and 1969, when President Nixon halted offensive germ-warfare efforts, army technicians misted the cadmium compound over a St. Louis slum, broke light bulbs filled with bacteria in the New York subways, fitted suitcases to spray passengers at Washington, D.C.'s National Airport and shot bacterial "aerosols" over the city of San Francisco. Since 1977, when newspaper reports led to congressional hearings on the spraying, the army has claimed that the agents were harmless. Biologists have answered that no large-scale release of bacteria should be considered safe. Though the army was probably not knowingly spraying toxic particles, all the simulants, experts say, should have been tested more stringently. "They didn't check the literature very carefully," says Matthew Meselson, professor of biochemistry at Harvard. "They were sloppy."

The clutch of damaged children in Minneapolis is being treated as fresh evidence that the army didn't look hard enough for dangers. Of 15 women who were in her fourth-grade class, Gorney has found, seven are sterile. The other eight have had 25 miscarriages among them. More than a third of the class's offspring are retarded. But even a localized crop of troubled pregnancies may be hard to pin on the spraying. "These clusters come up very often," says Dr. Allen Wilcox, chief of reproductive epidemiology at the National Institute of Environmental Health Sciences. Wilcox says the Minneapolis case warrants further study, though he cautions, "Ninety-nine out of 100 are coincidental." In a 1981 trial, the army successfully argued that an outbreak of rare bacterial infections that killed a man a month after the San Francisco test in 1950 was pure coincidence. The judge also ruled that the army had reasonable cause at the time to think the bacteria were safe. In a report delivered to Minnesota Sen. Paul Wellstone last week, the army is apparently readying to take the same position, disclaiming any adverse health effects while admitting there is limited data on how cadmium affects childbearing.

Meanwhile, Thomas still struggles with her three boys. "I wouldn't trade them in for anything," she says. "But what did I do wrong? I didn't take drugs. I just went to school." To her, her kids aren't all the army has to answer for. "At the very least, they violated our civil rights and called it patriotism." It's enough to give the cold war a bad name.

PAUL O'DONNELL *with* NINA ARCHER BIDDLE *in Minneapolis*

STEVE WOIT

Living evidence: *Thomas and her boys*

CLASSIFICATION

DUGWAY DOCUMENTATION ISSUE DISCUSSION SHEET

ISSUE NUMBER #

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PLAN OF ACTION TO RESOLVE ISSUE:

KEY PLAYERS IN ISSUE:

WRITTEN BY:
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