APPENDIX E

LICENSEE COMMENTS

DEPARTMENT OF THE ARMY
U.S. ARMY RESEARCH LABORATORY
2800 POWDER MILL ROAD
ADELPHI, MARYLAND 20783-1145

REPLY TO
THE ATTENTION OF

AMSRL-OP-IN-RK (385-11h) 24 January 1994

MEMORANDUM FOR Commander, U.S. Army Materiel Command,
ATTN: AMCSF-P (Mr. Manfre), 5001 Eisenhower
Avenue, Alexandria, Virginia 22333-0001

SUBJECT: Review of DRAFT Decommissioning Plan for Fort Ord

1. The subject DRAFT plan has been reviewed as requested. Based upon the experience gained by the Army Research Laboratory (ARL) in the decommissioning actions undertaken in Watertown, Massachusetts, the following **general** recommendations are provided:

a. Title Change. Recommend that the title and content of the entire plan be changed to reflect that the effort is not a decommissioning action, but rather a survey action that may require some limited decontamination. This recommendation is based upon the following considerations:

(1) Title 10, Code of Federal Regulations, Parts 30.36, 40.42, and 70.38 would suggest that the action at Fort Ord does not necessarily qualify as a "decommissioning" action. These sections seem to allow survey and decontamination efforts without the preparation of a decommissioning plan, as long as the efforts do not increase the potential health and safety impacts to workers or the public, as defined in each section.

(2) Not classifying the action as a decommissioning, if appropriate, would offer many benefits. First, prior approval of the subject plan by the Nuclear Regulatory Commission (NRC) would not be required, as specifically required in the case of a decommissioning. This would save many months in NRC review time. Secondly, the preparation of a decommissioning plan for review and approval by the NRC requires a level of detail and comprehensiveness that is not present in the DRAFT plan. Thirdly, the level of control and involvement by the commodity licensees could be justifiably reduced.

(3) It is generally agreed that no one expects to find serious contamination. Preparing a decommissioning plan would suggest to the NRC, the state, and the public, that the areas are seriously contaminated. And this would unnecessarily raise questions and concern about the level of control exercised over these areas in the past.

b. Commodity License Review. The commodity licenses must be reviewed carefully to determine whether any specific promises were made or requirements imposed for the release of those areas where commodities may have been stored, maintained, etc. If specific promises were made by the licensee, or specific requirements were imposed by the NRC, then the recommendation in paragraph a above could be nullified.

c. Establish State Health and Environmental Program Requirements. Recommend that before survey and clean-up work begins, it be established in writing with the state health and environmental departments, what residual contamination levels will be suitable for unrestricted use. This recommendation is based upon the following:

(1) Each state typically has specific and unique requirements for what level of residual contamination is acceptable for return of Army property to unrestricted use by the public. Unfortunately, meeting NRC limits does not guarantee satisfying state requirements.

(2) Establishing the state environmental program requirements that will be used to judge the adequacy of the clean-up can be difficult, since the consideration of radiological contamination in state environmental programs is just now developing, and has not generally been finalized. In the case of ARL at Watertown, the residual radiological contamination was addressed by the state environmental program through the Remedial Investigation/Feasibility Study/Risk Assessment process conducted by the Army Environmental Center (AEC). Therefore recommend that AEC be contacted to determine whether the Army or California will require the residual radiological contamination be included in the AEC effort, and what residual level will be consider acceptable by that environmental process.

(3) If state requirements are more stringent, as they usually are, then the surveying and clean-up conducted to demonstrate compliance with NRC limits may not demonstrate compliance with state requirements. A costly repeat of surveys and clean-up could therefore be required.

d. Licensee Role. Recommend that the role of the commodity licensees be better defined and described. If the effort is considered a decommissioning action, the NRC will expect a greater element of control and oversight over operations then if the effort is merely a survey and decontamination effort.

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e. Alarming Language and Terms. There is reference to "radioactive material operations" and "radioactive materials" throughout the plan. To some state and public readers, this may generate undue concern. Therefore recommend that the term "commodity" instead be used. Also recommend that the sealed and limited quantity nature of commodities be explained to the reader, as well as how the commodities were typically used, handled, and stored at Fort Ord.

2. **Specific** comments on the plan have been written in the margins of the enclosed DRAFT report, for consideration by the authors. It is understood that resolution of the general comments may render many of the specific comments no longer of concern.

3. The point of contact in this office is Mr. Michael Borisky, (301) 394-2218, or DSN 290-2219.

FOR THE CHIEF, INFRASTRUCTURE MANAGEMENT DIVISION:

Encl

for JEFFREY T. NELSON
Chief, Risk Management Branch

DEPARTMENT OF THE ARMY
UNITED STATES ARMY TANK-AUTOMOTIVE COMMAND
WARREN, MICHIGAN 48397-5000

REPLY TO ATTENTION OF

AMSTA-CZ (385-11) 7 March 1994

MEMORANDUM FOR Commander, U.S. Army Materiel Command, ATTN: AMCSF-P, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001

SUBJECT: Decommissioning Plan for Fort Ord, CA

1. Reference Routing and Transmittal Slip, AMC, AMCSF-P, 14 Jan 94, with the SAB.

2. In accordance with the referenced slip, the subject plan was reviewed and the following comments are provided:

a. Page 8, paragraph 1.3.7. Radioactive commodities such as the radium dials and gauges, engine spark igniters and the thorium liner were missing from the list. Other items were included in the plan, in drawings, but not specifically listed. They are the M1 Muzzle Reference Sensor (MRS), M1A1 Collimator, M18 Quadrant Fire Control, M1A2 Quadrant Gunners, Diver Watches, AN/TVS-4A, AN/PVS-3A, M58 and M59 Light Aiming Post, Panoramic Telescope M113A1 and Model 97 Explosives Detection Equipment.

b. Page 22, paragraph 5.5. Is the CAM considered a sealed source? We thought the CAM source was only plated on. Sealed sources must be registered with the NRC.

c. Page 106, paragraph o. TM 5-6635-386-12&P listed is incorrect. The current version is dated August 1991 and is titled "Unit Maintenance Manual For Tester, Density And Moisture (Soil And Asphalt), Nuclear Method, Campbell Pacific Model MC-1 'CCE), (NSN 6635-01-030-6896).

d. Page 107. TB 43-0216, "Safety And Hazard Warnings For Operation And Maintenance Of TACOM Equipment", needs to be added to the list. The TB sets procedures for handling TACOM radioactive materials, such as removing radium dials and gauges.

e. Also, in regards to potential contamination from the radioactive commodity, MC-1 Moisture Density Tester, all source wipes conducted in the past and present, have shown no contamination.

AMSTA-CZ (385-11) 7 March 1994
SUBJECT: Decommissioning Plan for Fort Ord, CA

3. The POC for this matter is Mrs. Karen Lapajenko McGuire, DSN 786-7635.

FOR THE COMMANDER:

for RICHARD M. GRNYA
Safety Director

CF:
AEHA, ATTN: HSHB-MR-HI (Mr. Harris Edge)

DEPARTMENT OF THE ARMY
UNITED STATES ARMY TANK-AUTOMOTIVE COMMAND
WARREN, MICHIGAN 48397-5000

AMSTA-CZ (385-11) 7 March 1994

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FOR THE COMMANDER:

for RICHARD M. GRNYA
Safety Director

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AEHA, ATTN: HSHB-MR-HI (Mr. Harris Edge)

AMSEL-SF-RER (AMCSF/10 January 1994) 1st End Mr. Craig/gv/
DSN 995-3112
SUBJECT: Fort Ord Decommissioning Plan, Review comments

Commander, U.S. Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-SF-RER, Fort Monmouth, NJ 07703-5024
16 March 1994

FOR Headquarters, U.S. Army Materiel Command, ATTN: AMCSF-P (John Manfre), 5001 Eisenhower Avenue, Alexandria, VA 22333-0001

1. As requested, we have reviewed the draft copy of the Fort Ord Decommissioning Plan and provide our comments at the enclosure.

2. As a general comment, we believe the plans organization is good but the content of sections is too specific when discussing survey methods, instrumentation, laboratory equipment and procedures.

3. A decommissioning plan should be developed that will satisfy the U. S. Nuclear Regulatory Commission (NRC) license requirements for release of any site. The only sections of the plan that should be site specific are the introduction sections, Executive Summary, Background, Base Closure Plan, History Review, and Site Safety Plan.

4. The sections of the plan addressing survey procedures and sample analysis requirements should only specify report results requirements. To make effective use of available resources, the procedural sections should not be technique or instrumentation specific. The type of equipment and methods can vary from site to site as long as the requirements for surveys and analysis are satisfied.

5. Specifics of techniques and instrumentation should be addressed in the final report. The final report would explain how requirements were satisfied, what methods and instrumentation were used and how Quality Assurance and Quality Control (QA & QC) verifications were performed on all aspects of the decommissioning activity.

E-9

AMSEL-SF-REE
SUBJECT: Fort Ord Decommissioning Plan, Review comments

6. Our POC is David Craig, Milnet (AMSEL-SF@MONMOUTH-EMH3.ARMY.MIL); Facsimile on DSN 995-2667 or (908) 544-2667; or Voice on DSN 995-3112 or (908) 544-3112.

7. CECOM Bottom Line: THE SOLDIER.

Enclosure

STEVEN A. HORNE
Chief, Safety Office

Fort Ord Decommissioning Plan Consolidated Comments

General Comment

The Fort Ord Decommission Plan is a mixture of specifics and generalities. The organization of the plan is good. However, the plan needs to be sanitized and reduced in length. The plan needs to be an outline of the required elements of the final report. The final report for a site is where the specifics of the operation should be laid out.

Suggestions for development of a plan:

The plan should not be a Fort Ord specific plan. The plan should be a "Site Radiological Release Plan" that satisfies the survey needs of all military sites.

The plan should be laid out as a progression of activities. Following the plan should result in the final report data for a site being generated as a progression of administrative and operational actions that follow a logical sequence.

1. Identified need to survey site.
2. Site history determines level of survey required for total site and points of high potential on the site.
3. Survey methods identified and performed.
4. QA documentation.
5. Site release report completed.

A operations "master plan" should be developed. This plan should have several survey intensity levels. The proper level of initial survey would be determined by the historical review of the site to be surveyed.

No specific equipment procedures should be included in the plan. The plan should identify the limits that must be detectable for each detection/survey/counting method used. The final report for each site should contain a section that identifies specific instrumentation used for surveys and counting.

COMMENTS ON FORT ORD DECOMMISSIONING PLAN.

1. Generic Comments.

a. The plan should be condensed. Much duplication should be removed. If the plan was written to recognize that the same group is performing all surveys except the confirmation/verification survey, the plan could be simplified. Focus the plan on the steps required to perform a site closure. The plan should be a site closure procedure. Radiation dose and contamination limits and action levels should be in the plan. No specific instrument procedures should be included. The technical procedures for instruments actually used for each survey should be an addendum to the plans final report.

b. Addition of a flow/logic diagrams would add and enhance understanding.

(1) Flow / Logic

(a) Initial survey choice.
(b) Conditional decisions (action levels) to go to next level of survey.
(c) Conditions that permit a survey to be used as a final.

c. The plan includes procedures for quantitative determination of both fixed and removable contamination with field survey instruments. Recognizing that the CECOM mobil lab contains laboratory counters, the use of field survey meters should only be used for fixed contamination and dose rate surveys and qualitative determinations of removable contamination before transfer to the counting lab.

d. The plan requires gamma readings to be recorded in roentgens, a unit of exposure. 10 CFR 20 no longer uses this term. The gamma readings should be recorded in rem or rad, the units of dose. The release limits imposed by States and the NRC are in units of dose to members of the general public.

2. Section Specific Comments.

a. Section 1. No comments

b. Section 2. Should clarify who, or what organization performs each survey.

c. Section 3. No comments.

d. Section 4.

Section 4.5.3. Is personnel protective clothing really required for the scoping survey? The areas designated for scoping survey are areas that have only been used for storage of sealed sources. No protective clothing or special procedures related to radioactive material have been in place for these areas during their use by the military. The potential for contamination in these areas is very low. The use and level of protective clothing should be appropriate for the conditions.

e. Section 5.

(1) Following performance of the scoping survey, some means of securing areas that have been found to be clean should be established. Locking the area, posting signs, or otherwise identifying the area should be used.

(2) Following the scoping survey the plan should provide for notification of the agency/organization that has responsibility to perform a confirmation/verification survey of those areas found to be "clean".

(3) Section 5.5.2.1 and 5.5.2.2. In each survey section, when discussing wipe test refer to the detailed wipe test procedures.

f. Each of the survey procedures are so nearly identical that one (scoping) procedure should be developed and used for all surveys. Only conditions that are additional requirements for a survey type should be listed for that survey. i.e., reduced grid size, more wipes per grid, protective clothing additions, etc.

g. Section 6.

(1) Section 1.2, 6.4.3.1, and others. As the same group will be performing both the scoping survey, and when required, the characterization survey, the preliminary requirements are redundant.

(2) Section 6.4.4.1. Specify that the alpha survey meter should be held in position long enough for the count rate to stabilize.

(3) Section 6.4.4.2. Clarify that highest gamma reading in each grid is recorded. Reference to all gamma reading is misleading.

(4) Section 6.4.3.3.(E). Clarify steps for taking six to ten readings in an area with a gamma survey meter. Is this six to ten different locations, or six to ten readings in the same location?

(5) Section 6.4.3.3.(F). Define blank wipes. Background swipes should be from the clean area. A blank swipe consisting of a new clean filter may not count the same as a filter used to wipe a "clean" area. Dust collected on the filter from the clean area could result in sample self absorption.

h. Section 7. Procedure should clarify that remedial surveys are to determine how efficient the decontamination is and survey results are only used for this purpose. The final status survey is the only one that needs to provide the detail necessary for documentation.

Section 7.5, Collection and segregation of waste generated during decontamination should be addressed. Local disposal of waste containing activities within limits should be considered. Waste generated during scoping surveys and characteristic surveys should be labeled and stored separate from "contaminated waste". If the areas are clean areas based on the survey results this waste can be disposed of as normal waste. This can save hundreds of dollars.

i. Section 8.

(1) Section 8.3.2. The final status survey should not identify any areas where radioactive contamination exceeds limits. These areas were identified in the scoping survey, further described in the characterizations study, and surveyed again after decontamination. Identified areas that exceed any release limits will remain the responsibility of the U. S. Army and this would be identified in final report.

(2) Section 8.4 There can be no assumptions in area release surveys. Each item must be verified. If not, the area is not ready for release. A scoping survey will evolve into the final status survey if there is no indication of any radioactive material involvement in the area.

(3) Section 8.6.3.1. Swipes should be used for final survey to the maximum practicable extent. Instruments should be used only to identify fixed contamination.

(4) Section 8.6.3.1.A. Alpha limits are in dpm/area. Are the calculations included on the work sheets for cases where alpha meters have different detector areas and/or the meter reads is CPM. How do you assign an area to the dpm recorded from alpha survey with a hand held meter? Field data forms should identify the specific instrument and probe used for survey. Field readings should be taken directly from the instrument. If instrument readings require conversion to dpm/area this should be performed and verified by desk top calculations, not at the survey site.

(5) Section 8.6.... Environmental surveys should be an attachment. Need to define a scoping survey for suspect soil, air, water.

(6) Section 8.6.3.2. The CECOM mobile lab has capabilities to count soil and water samples.

(7) Section 8.6.4.1.A. Define 70% of guideline rule. QA/QC checks are not the place that this should be determined. The plan should limit instrument use to those that will satisfy rules.

o. Section 14.

(1) Section 14.1.7.3 Why report as less than activity? You have a reading above LLD; isn't a less than upper 2 sigma value more correct or calculated activity with 2 sigma error shown. What makes the detected activity the upper limit?

(2) Section 14.2.1.2 Limit for isotopes is given as 100 dpm/wipe. Is it assumed that wipes are 100 cm2 area wipes? Detection limits for each isotope are given in microcurie/wipe. Why not use same units (dpm or microcurie) in the paragraph. I assume the detection limits are for a specific counting system and protocol.

NOTE Detection limit given for tritium is greater than action limit. A longer counting time is needed for sure in this case.

(3) Section 14.2.2 to end of section 14. Specific laboratory procedures, equipment and cocktails. This section needs to be specific but it should be prepared for the equipment being used.

p. Section 15 This is a reprint of general decontamination practices. Plan should be specific to team exit procedures to detect contamination. How personnel decontamination will be handled at the site. A alert level of detected removable contamination should prompt bioassay if high levels of C-14, H-3, or Ni-63 contamination are detected in analysis. What level will initiate bioassay 1,000,000 dpm, 10,000,000 dpm, etc.?

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D. The plan requires gamma readings to be recorded in roentgens. The new 10 CFR 20 no longer uses this term. The gamma readings should be recorded in rem or rad (the same for gamma in the energy ranges that would be expected).

II. Specific Comments.

A. Section 2 should clarify who, or what organization performs each survey.

B. Section 5. Following performance of the scoping survey, some means of securing areas that have been found to be clean should be established. Locking the area, posting signs, or otherwise identifying the area should be used.

C. Section 5. Following the scoping survey the plan should provide for notification of the agency/organization that has responsibility to perform a confirmation/verification survey of those areas found to be "clean".

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F. Section 6.1.2, 6.4.3.1, and others. As the same group will be performing both the scoping survey, and when required, the characterization survey, the preliminary requirements are redundant.

G. Section 6.4.4.1. Specify that the alpha survey meter should be held in position long enough for the count rate to stabilize.

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J. Section 6.4.3.3.(F). Define blank wipes. Background swipes should be from the clean area. A blank swipe consisting of a new clean filter may not count the same as a filter used to wipe a "clean" area. Dust collected on the filter from the clean area could result in sample self absorption.

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P. Section 8.6.3.1. For final survey swipes should be used to the maximum practicable extent. Instruments should be used only to identify fixed contamination.

Q. Section 8.6.3.1.A. Alpha limits are in dpm/area. Are the calculations included on the work sheets for cases where alpna meters have different detector areas and/or the meter reads is CPM. How do you assign an area to the dpm recorded from alpha survey with a hand held meter? Field data forms should identify the specific instrument and probe used for survey. Field readings should be taken directly from the instrument. If instrument readings require conversion to dpm/area this should be performed and verified by desk top calculations, not at the survey site.

R. Section 8.6.... Environmental surveys should be an attachment. Need to define a scoping survey for suspect soil, air, water.

S. Section 8.6.3.2. The CECOM mobile lab has capabilities to count soil and water samples.

T. Define level D protective equipment.

U. Section 8.6.4.1.A. Define 70% of guideline rule. QA/QC checks are not the place that this should be determined. The plan should limit instrument use to those that will satisfy rules.

V. Section 8.6.4.1.C. Operation checks are to be within 10% of what? Define the desired parameter. Operation checks are generally go / no go checks, if a battery check is 99% good it is no good.

W. Section 10.4.2. Forcing or adjusting all instruments to read the same background baseline will violate calibration. Instruments of same type/manufacturer will read within +/- 10

percent of each other when correctly calibrated.

X. Section 11 Survey Procedures. Survey procedures should describe how to perform a survey with whatever acceptable equipment is available. Use the same format for all survey procedures.

1. Preoperation checks.
2. Survey techniques.
3. Sample / reading recording.
4. Post operation activities.

Y. Section 11.1 This section is specific to the point that it is ambiguous. Detailed instructions on voltage settings for detectors, number and type of batteries to use, find the HOG, what to do at the HOG. What conditions will initiate use of this section? Is it routinely performed as part of scoping.

Z. The normal background count rate of a NaI(Tl) detector is so high that it becomes very difficult to measure low level contamination.

AA. Section 11.1.4.2. Define HOG. (Highest Observed Gamma reading?)

AB. Procedure sections 11.6, and 11.7.1 to 11.7.4.1. were missing from copy supplied.

AC. Section 11.2.1.B. Substitute word gross for net in formula for efficiency.

AD. The data recorded in the log and data recorded for daily efficiency checks should be tailored to the instruments being used. Some alpha survey meters may not have window or low level discriminator settings.

AE. Section 11.7.4.2.B There is no "as above" that explains collected, processed and otherwise handled. Alpha counting soil samples with field alpha survey instruments isn't qualitatively or qualitatively possible. Soil samples must be prepared in a laboratory and counted in conditions that reduce sample self absorption.

AF. Survey meters should be used for qualitative and not quantitative determinations.

AG. Section 12, 13 and 14 should be revised to address actual equipment, including mobil lab, in use.

AH. procedure for tritium wipe should clarify that a nitrocellulose filter should be used. Do not use brand names.

AI. Section 14.1.7.3 Why report as less than activity? You have a reading above LLD; isn't a less than upper 2 sigma value more correct or activity with 2 sigma error. What makes the

detected activity the upper limit?

AJ. Section 14.2.1.2 Limit for isotopes is given as 100 dpm/wipe. Is it assumed that wipes are 100 cm2 area wipes? Detection limits for each isotope are given in microcurie/wipe. Why not use same units (dpm or microcurie) in the paragraph. I assume the detection limits are for a specific counting system and protocol. NOTE Detection limit given for tritium is greater than action limit. A longer counting time is needed for sure.

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