

ColWood/ac/5294  
Date typed: 23Aug57

CMC/TC-S-2

23 August 1957

United States Atomic Energy Commission  
Oak Ridge, Tennessee  
ATTN: Mr. James W. Hitch, Isotopes Extension

Subject: Progress Report on Implementation of Improved Safety Procedures

Dear Mr. Hitch:

The following steps have been taken to comply with the recommendations made at our recent meeting with you at Oak Ridge. Also, certain procedures have been established in accordance with the comments given in your letter of 16 August 1957.

1. The U. S. Army Chemical Corps School now schedules Isotope Committee Meetings on a regular basis.

2. ORGANIZATION FOR RADIOLOGICAL SAFETY - The Isotope Committee Standing Operating Procedure is being corrected and a copy will be sent to you in the near future. The suggestions made in paragraphs 3, 4, 8, 9, 10 and 11 of letter dated 16 August 1957 will be adopted.

3. OPERATIONAL DIRECTIVE #2. 12. a. - Colonel Cameron, the Isotope Committee Representative, plans to discuss this problem with the members of the Isotope Committee.

4. OPERATIONAL DIRECTIVE #3 - 4. a. (3). - A letter has been written to Third Army and to the Office of the Chief Chemical Officer, General Greasy, indicating the high priority of a more effective barrier. Cost estimates have been obtained and a local contractor has the facilities and equipment to install this fence. We feel that it would be impossible to install a fence with local labor at the 300 mr/hr line and have made a detailed survey of the range and the road network, in order to plan for a fence of some 3.5 miles outside of the 2 mr/hr line.

5. OPERATIONAL DIRECTIVE #3 - 4 a. (5). - On 15 August 1957 some 20 sources were sampled. It was found that there were no leaks from the Cobalt 60 field sources.

CMR/C-S-2

23 August 1957

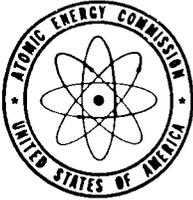
U. S. ASI, Oak Ridge, Tenn, ATTN: Mr. James W. Hitch

Subj: Progress Report on Implementation of Improved Safety Procedures

I have been informed that a copy of the letter to Third Army has been sent to your office. We are making every possible effort to put this field in a secure condition and will keep you posted as to the progress being made.

Sincerely,

C. H. WOOD  
Colonel, GALS  
Assistant Commandant



UNITED STATES  
ATOMIC ENERGY COMMISSION

IN REPLY REFER TO:  
IEB:DAS

Oak Ridge, Tennessee  
August 16, 1957

U. S. Army Chemical Corps School  
Fort McClellan, Alabama

Attention: Col. C. H. Wood, Chairman  
Radioisotopes Committee

Subject: COMMENTS ON FORT McCLELLAN'S "STANDARD OPERATING PROCEDURES FOR  
WORK INVOLVING RADIATION HAZARDS."

Dear Col. Wood:

As requested, we have reviewed your recent draft of "Standard Operating Procedures for Work Involving Radiation Hazards." We offer the following comments:

1. ORGANIZATION FOR RADIOLOGICAL SAFETY - B. As a general rule, we recommend that Isotope Committee meetings be regularly scheduled. The practice of scheduled meetings tends to encourage action as a group and discourages gradual assumption of the Committee's function by a single individual. Regular meetings, of course, should be supplemented by those called at the discretion of the Chairman.
2. ORGANIZATION FOR RADIOLOGICAL SAFETY - C.2.b. - We are not quite sure what is meant by maintaining authorizations. Does this refer to the procurement approval which has been granted by your Isotopes Committee?
3. OPERATIONAL DIRECTIVE #1, 2. As discussed during our visit, we suggest that Title 10, Code of Federal Regulations, Part 20 (10 CFR 20) be referenced rather than the National Bureau of Standards. You may also wish to expand this section to cover exposure of minors (reference 20.101(c) 10 CFR 20).
4. OPERATION DIRECTIVE #2. It may be advisable to add an Item 11.f. to provide for certification of lost radiation dosage readings. On occasion a batch of film may be "lost" because of contamination, heat, dark room processing error, etc. Such instances should be duly recorded.

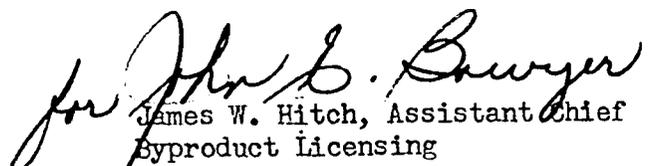
August 16, 1957

5. OPERATIONAL DIRECTIVE # 2. 12. a. A variety of opinions exist concerning how great the radiation exposure should be before requiring medical attention. You may wish to discuss this further with your Isotope Committee Medical representative. For determination of internal exposure, a radioactivity analysis of the urine may be of definite value.
6. OPERATIONAL DIRECTIVE # 3 - 4. a. (3) As discussed during our visit, we recommend a more effective barrier be installed around permanent radiation fields.
7. OPERATIONAL DIRECTIVE # 3 - 4 a. (5) Also as discussed, 5 - 10% representative sampling may be employed for leak testing the Cobalt 60 field sources.
8. OPERATIONAL DIRECTIVE # 5 - 7 (a) The referenced paragraph on sanitary sewer disposal should be 20.303, Title 10, Code of Federal Regulations, Part 20.
9. OPERATIONAL DIRECTIVE # 6 - 2. Apparently a typographical error has been made in the definition of an incident. Perhaps the May 14, 1957, Amendment to 10 CFR 20 may be of assistance in defining an incident. We recommend that the reporting requirements prescribed therein be included in your course of action.
10. As previously discussed, an OPERATIONAL DIRECTIVE on the procurement of radioisotopes may be a worthwhile addition to the Standard Operating Procedures.
11. An OPERATIONAL DIRECTIVE should be added to provide issuance of written radiological safety instructions to students. If the instructions do not contain military classified data, we would be pleased to receive and review a copy. Should they contain classified material, a brief non-classified summary would be appreciated.

Understandably, there will be some variation between the instructions appropriate for your students and instructions which may be provided a university student who is working with microcurie quantities.

Be assured of our interest in serving your radioisotope needs.

Very truly yours,

  
James W. Hitch, Assistant Chief  
Byproduct Licensing  
Isotopes Extension  
Division of Civilian Application

Enclosure:  
Licensing Requirements for Broad Licenses.....  
cc: Captain Archie L. Stamper

Col Wood

Major Hinman/smc/4162

CMRTC-L 600.1

22 AUG 1957

**SUBJECT: Fencing of Pelham Range (Radiological Training Area)**

**TO: Commanding Officer  
Fort McClellan, Alabama**

1. On 27-28 May 1957, the radiological facilities of the US Army Chemical Corps School, this command, were subjected to a Radiation Protection Survey. This survey was conducted by representatives of USA Environmental Health Laboratory, Army Medical Service, Army Chemical Center, Maryland.

2. Included in the report of this survey was the following recommendation:

"~~Either~~ erect a 7-foot high, chainlink fence, or equal, around the present radiation area within Pelham Field; post the fence with signs as required by para 20.203 (c) of AEC regulations; and lock the entrance, ~~or~~ lock the entrance to present barbed wire enclosure; erect an additional fence around the sources at such a distance that the exposure rate at the fence does not exceed 300  $\mu$ r/hr; post the fence with signs as required by para 20.203 (c) of AEC regulations; and indicate the exposure rates on the signs."

3. On 7 August 1957, Colonel C. H. Wood, Assistant Commandant, Chemical Corps School, attended a conference at AEC, Oak Ridge, Tennessee. During this conference, the recommendations contained in the Radiation Protection Survey Report were discussed, and the following modifications to the recommendation quoted in para 2 above were approved:

Construction of a 6-foot fence, consisting of 4-foot hlg wire, topped by 3 strands of barbed wire, along the inside edge of a fire trail or bull dozed road. The radiation level at the fence should be no higher than 3  $\mu$ r/hr.

**CMLTC-L 600.1**

**SUBJECT: Fencing of Pelham Range (Radiological Training Area)**

4. Upon receipt of the survey report, 8 July 1957, action was taken to get an extension of the existing AEC Isotope "License of Byproduct Material" at the US Army Chemical Corps School until 31 October 1957. This extension was approved with the proviso that corrective action would be initiated on the recommendations, and specifically the one contained in para 2 above.

5. It is recognized that this project was unforeseeable during FY 58. Nevertheless, since it has taken on the nature of an emergency it is requested that the construction of subject fence for the elimination of the existing safety hazard be undertaken by you as early as practicable. Without immediate corrective action, the Chemical Corps School will have its AEC license revoked and will be prohibited from conducting further training or testing in radiological defense.

**Copies Furnished:**  
**OCGmlO**  
**Attn: Plans & Eng Div**  
**AEC, Oak Ridge, Tenn**  
**Attn: Mr. Hitch**

**J. M. PALMER**  
**Colonel, GmC**  
**Commanding**

PRIMARY EXPENSE ACCOUNT 2110.9 (U.S. Army CalC School - O&M of Facilities)

Dollar Requirement

	<u>FY 1958</u> <u>Tentative AFP</u>	<u>FY 1959</u> <u>Estimate</u>
Total	\$854,400	\$948,600

**NARRATIVE:**

Distribution of funds for Operation and Maintenance of Facilities to Project 2110 for FY 1958 and FY 1959 is based on the following factors:

	<u>FY 1958</u>	<u>FY 1959</u>
a. Local Headquarters and Command Administration	43.2%	41.1%
b. Local Welfare Services	40.6%	38.9%
c. Local Maintenance and Management of Facilities	61%	45.5%
d. Field Maintenance	51.1%	51.1%
e. Local Logistic Services	43.2%	41.1%

A requirement of \$90,000 is included in FY 59 to improve the radiological facilities at the U. S. Army Chemical Corps School. This sum is needed to meet the minimum safety requirements established by the Atomic Energy Commission. In order to accomplish the objectives and comply with the recommendations of the Report of Radiation Protection Survey Number 2672R75-57, dated 27-28 May 1957, conducted by Inspection Team, U. S. Army Environmental Health Laboratories, Army Chemical Center, Maryland, the following facilities are needed:

a. Construction of a permanent improved "Hot Cell" facility to conform to AEC specifications - \$70,000. The cell would be needed to replace the existing cell which does not meet the new specifications of the AEC.

b. A new remotely selected storage well facility to be constructed in conformance with AEC specifications for use in conjunction with "Hot Cell" facilities - \$10,000.

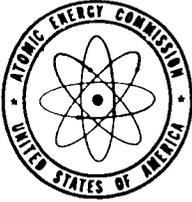
c. Fencing of the survey area and burial ground at Pelham Field, with 7 foot high chain link fence, or equal, posting of the fenced area with proper signs, and providing for a locked entrance to the fenced area. Construction of a dirt surfaced perimeter road outside of the fence, at least wide enough for inspection by a jeep. Fence of approximately 4 miles in total length. Fencing of local burial ground which would need approximately 400 yards of fencing. (10,000)

d. Copies of the Report of Radiation Protection Survey are on file at the following agencies:

The Surgeon General, Department of the Army, Washington 25, D. C.  
ATTN: MEDCH-CH

Chief Chemical Officer, Department of the Army, Washington 25, D. C.  
ATTN: CCMC-T-2

COMMANDANT, U. S. Army Chemical Corps School, Fort McClellan, Ala.  
ATTN: CCMC



UNITED STATES  
ATOMIC ENERGY COMMISSION

Oak Ridge, Tennessee  
July 30, 1957

IN REPLY REFER TO: IEB:JWH  
(AU 37769)

The Chemical Corps School  
Chemical Corps Training Command  
Fort McClellan, Alabama

Attn: C. H. Wood, Colonel, Cml C  
Chairman, Radioisotope Committee

Subject: EXTENSION OF LICENSE (AUTHORIZATION NO. 37769)

Dear Sir:

In accordance with the letter of July 23 from Lt. Colonel William B. Ware, General Authorization No. 37769 is hereby revised to further extend the expiration date to October 31, 1957. This extension is being given to permit the completion of our review of your application dated April 10, 1957 for a renewal of your license.

We have received Major John B. Beach's letter of July 24 and note that he speaks of a letter from Colonel Wood and that a copy of such a letter is enclosed. It appears that this copy may have been misplaced since we did not receive it as an enclosure with Major Beach's letter.

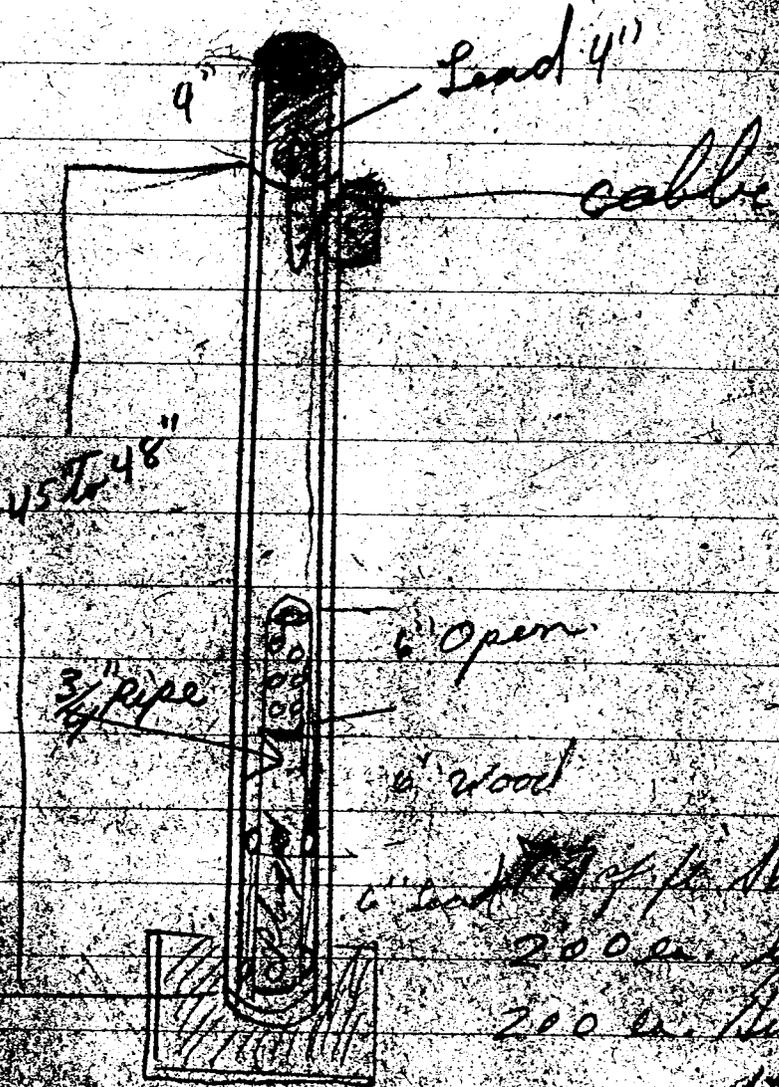
It is also indicated in Major Beach's letter that you would like to come to Oak Ridge to discuss in detail your pending application. We shall be happy to discuss with you, at your convenience, any points you may care to raise. We would appreciate however that you give us a few days notice so that we can have the proper personnel present at the time of your proposed visit.

Very truly yours,

  
James W. Hitch, Assistant Chief  
Byproduct Licensing  
Isotopes Extension  
Division of Civilian Application

cc: Colonel John R. Hall, Jr.  
Washington, D.C.

Hinge 1 side  
Harp 1 side



200 ft. of 1 1/2" pipe  
200 ft. of 1 1/2" pipe  
200 ft. of 1 1/2" pipe  
Hinge

1000 ft. 1 1/2" to 2" pipe

400 ft. 3/4" conductor

1500 ft. 1/2" wire rope

200 ft. pulleys 1 1/2"

100 ft. of 1 1/2" pipe

Important

CNR

LICENSING REQUIREMENTS FOR BROAD LICENSES FOR  
RESEARCH AND DEVELOPMENT

AUGUST 1, 1957

ISOTOPES EXTENSION  
UNITED STATES ATOMIC ENERGY COMMISSION  
POST OFFICE BOX E  
OAK RIDGE, TENNESSEE

LICENSING REQUIREMENTS FOR BROAD LICENSES FOR  
RESEARCH AND DEVELOPMENT

The purpose of this announcement is to acquaint applicants with the type of information needed by the Commission's radioisotope licensing group to review an application for a broad specific license for research and development.

A broad specific license for research and development is reserved to accommodate those institutions involved in a large radioisotope program where the demand is great for a variety of radioisotopes for many uses in research and development. This type of license is issued for all radioisotopes between Atomic Numbers 3 and 83, inclusive. It is unnecessary to list each radioactive element and its chemical or physical form as is required in applying for a limited specific license. When it has been determined that an institution can no longer operate under a limited specific license without seriously hindering their program, the following guide should be used in applying for a broad specific license for research and development purposes.

I. GENERAL REQUIREMENTS

A. Application Form AEC-313

All items on the application should be completed in detail so that a realistic review may be made of the institution's instrumentation, facilities, provisions for personnel monitoring, waste disposal, etc. The space provided on the Application Form AEC-313 is limited, and applicants should append additional sheets so that complete information may be presented.

B. Possession Limit

A possession limit is that quantity of any radioisotope which a licensee may have in his possession at any one time. For example, a limit of 10 millicuries for each byproduct material between Atomic Numbers 3 and 83, inclusive, may be adequate. However, the actual possession limit requested should be commensurate with the applicant's need and facilities for safe handling. It may be necessary to establish higher possession limits for certain isotopes which the applicant may need in quantities in excess of the general possession limit for other isotopes. Such needs should be clearly stated. It may also be necessary to limit the quantity of more hazardous isotopes, such as Strontium 90. In addition, the total quantity of all byproduct material which the applicant desires to possess at any one time should be stated. Stored wastes should be included in establishing the total possession limit.

1. Teletherapy, Gamma Irradiation Facilities, Etc.

A separate application should be submitted for multi-curie sealed sources, teletherapy, gamma irradiation facilities, etc. Upon request, the Isotopes Extension will outline the type of information which the applicant should submit in support of such an application.

2. Byproduct Materials Outside Atomic Numbers 3 - 83

Isotopes such as Hydrogen 3 and Polonium 210 may be included in an application for a broad license. The possession limits for these isotopes should be stated separately from that requested for Atomic Nos. 3 - 83. However, the total possession limit should include these materials.

NOTE: Hydrogen 3 (tritium) is the only radioisotope licensed on a procurement limit, as well as a possession limit, basis. Therefore, applicants desiring to use Hydrogen 3 should state not only the amount of Hydrogen 3 which they wish to have in their possession at any one time but also the total quantity which they desire to procure during the valid period of the license.

If any licenses for byproduct materials outside Atomic Numbers 3 - 83 have been issued prior to submission of an application for a broad license, a request for these materials should be resubmitted so that one license may be issued for the institution's total program.

II. ISOTOPE COMMITTEE

An institution desiring a broad specific license for research and development must form an isotope committee in conformance with Section 30.24(d) (3) of Title 10, Code of Federal Regulations, Part 30, "Licensing of Byproduct Material". A list of the members of the committee and a description of the training and experience with radioactive materials, if any, of each member should be submitted. The control functions of the committee and the administrative procedures by which these functions are carried out should be delineated. These functions should include:

- (1) the frequency at which members meet to discuss and act on proposals relative to the use of radioisotopes.

- (2) the method the committee will employ to determine whether an individual is qualified to use radioisotopes.
- (3) the procedures used for controlling procurement of radioisotopes.
- (4) the methods used to maintain an inventory of radioisotopes and control of possession limits.

III. RADIATION PROTECTION OFFICER

A radiation protection officer must be appointed by the isotope committee. A description of his training and experience with radioactive materials and in the field of radiation protection should be provided. The radiation protection officer should be responsible for overall radiation protection within the institution.

IV. RADIATION PROTECTION PROCEDURES

A formal set of rules, recommendations, and procedures for procurement and safe handling of radioisotopes within the institution should be established by the isotope committee. A copy of these rules and procedures should be given to all personnel under the jurisdiction of the isotope committee. A copy should accompany the license application.

V. OTHER

A broad specific license does not authorize the use of radioisotopes for field uses or in products distributed to the public unless such uses are specifically requested and detailed in the application. Approval of such requests is dependent on the supporting information which the applicant submits regarding the uses. Upon request, the Isotopes Extension will outline the type of information which the applicant should submit in support of such an application.

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Isotope Committee Meeting  
1957c Thirtieth Meeting, 2 October 1957. The Chemical Corps School,  
Fort McClellan, Alabama.

US ARMY CHEMICAL CORPS SCHOOL  
FORT McCLELLAN, ALABAMA

MINUTES OF ISOTOPE COMMITTEE

2 Oct 1957

The 30th meeting of the Isotope Committee was called to order at 0930 hours, 2 Oct 1957.

Those present were Col Wood, Col Cameron, Lt Col Bacon, Lt Col Brice, Maj Beach, Maj Hinman, Capt Stamper, Lt Powell, Lt Johnson, and Lt Ellis.

Correction to the previous minutes was the changing of the word bibliographies to biographies. The primary purpose of the meeting is orientation of interested personnel for Mr. Hitch's visit on 3 Oct.

The fence at Rattlesnake Gulch has been completed and appropriate signs posted. Readings inside the area are about 1 mr/hr.

Bulldozers are clearing a path for the fence to be built around Area No. 3 Pelham Range. At present approximately 600 yards has been cleared. US Army Chemical Corps Training Command has received an allowance of \$10,000 for construction of the fence. \$8,500 is to be allowed for maximum bid price on the fence while the remaining \$1,500 is to be used for preparing a temporary hot cell.

The new hot cell was discussed. It was suggested that perhaps a semi-permanent hot cell should not be built this year. Since a new permanent cell has been asked for in the budget for next year the construction of a semi-permanent structure may impair the chance of acquiring the permanent cell. After discussion it was decided to go ahead with plans for a temporary hot cell.

The separation of Health Physics from the Radiological Branch was discussed. No solution was reached.

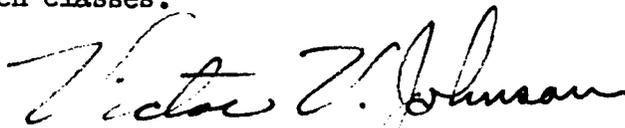
A discussion was held on safety officers and their qualifications. It was suggested that US Army Chemical Corps Training Command and Post's safety officers be kept informed by the Isotope Committee. They could also attend safety courses taught by the Radiological Branch.

It was moved and passed that another request for a civilian Health Physicist with a job level of GS-11 should be requested.

Inventory and labeling of sources has not been accomplished. Inventory will be done when the proper handling tools and labels are available.

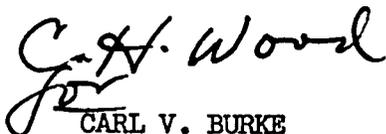
Requests have been made as to the price of metal tags which are to be used for labeling sources. It was suggested that these be made in our own machine shops.

The lowering of the sources in the radiation field at Pelham Range was discussed. The condition of the field as it now is with rusty cables and dense vegetation would make it difficult to lower the sources. The field will be burned this fall and next spring chemically sprayed to reduce growth of vegetation. When the fence is completed around the area it will not be necessary to lower the field at any time unless there is an exceptionally long period of time (1 or 2 months) between classes.



VICTOR V. JOHNSON  
2/Lt                      CmlC  
Recorder

APPROVED:



CARL V. BURKE  
Colonel, CmlC  
Commandant

CMELTC-SDI

1 October 1957

Mr. A. Krasnow  
Nuclear Systems  
2950 Roberts Avenue  
Philadelphia 32, Pennsylvania

Dear Mr. Krasnow:

With reference to our conversation last Thursday, 26 September, I am supplying the information that you requested:

- a. Master Slave Manipulator, Model 4  
Central Research Laboratories, Inc., Red Wing, Minnesota
- b. Window is 12" x 18" x 9" thick and made of two layers of glass 5" thick with density of 4.72, and 4" thick with density of 3.2

I appreciate your interest in the problem that we discussed, and want to reemphasize that our conversation was on an informal basis only and in no way can I commit either the Chemical Corps or the U. S. Army Chemical Corps School to any promises concerning the design or preliminary design data for a radiation "hot cell."

The information I received from you will be used for post planning purposes in order to initiate a request for additional work in this area.

Again, may I thank you for your many courtesies.

Sincerely,

C. H. WOOD  
Colonel, GmlC  
Acting Commandant

cc: Isotope Committee

CaptStamper/ac/7184  
Date typed: 23 Sep 57

CGMFC-SDI-T-8

**SUBJECT:** Progress Report on Radiation Protection Survey No. 2672K75-57

**TO:** Chief Chemical Officer  
Department of the Army  
Washington 25, D. C.  
**ATTENTION:** Mr. G. L. Feazell

**1. References:**

a. Letter MEDEI-R 726.2, Subject: "Report of Radiation Protection Survey No. 2672K75-57," HQ, US Army Environmental Health Laboratory of the Army Medical Service, Army Chemical Center, Maryland, dated 17 June 1957 and 31 Indorsement thereto, CGMFC-S-8, US Army Chemical Corps School, dated 23 July 1957.

b. Telephone conversation between Mr. Feazell, CGCMLO, and Colonel Wood, Acting Commandant, US Army Chemical Corps School, dated 23 September 1957.

**2. Report requested is attached as Inclosure 1.**

**FOR THE ACTING COMMANDANT:**

**2 Incis**  
1. Progress Rpt  
2. Notes on Conf at  
Oak Ridge

**CHARLES D. GAUSKY**  
Major, CMIC  
Secretary

cc: Health Physics Gp

Isotope Committee Meeting  
1957d Meeting, 13 November 1957. The Chemical Corps School,  
Fort McClellan, Alabama.

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copy

MINUTES OF ISOTOPE COMMITTEE MEETING  
13 November 1957

1. Meeting was called to order at 0745 hours.
2. Members present were: Colonel Wood, Colonel Cameron, Lt Colonel Bacon, Major Beach, Major Hinman (attended the meeting as an auditor from USA CmlC Tng Comd), Lt Johnson, Lt Powell and Lt Knight.
3. A statement was made by Lt Powell that all of the cesium plastic capsules will be placed in brass capsules and sealed with Specification 430 silver solder within the next two weeks. (We now have 7 cesium sources, 6 of which are in plastic capsules. These will be put in metal by Health Physics as soon as possible.
4. Lt Johnson advised that the fence at Pelham Range has been completed. (Confirmed by Major Hinman.) It was necessary to put in a 14-foot gate in order to allow the entrance of a bulldozer when needed. Colonel Wood stated that he planned to go out to Pelham Range to observe the situation. ←
5. Lt Johnson advised that the biographies and pictures of the members of the Isotope Committee would be completed on 14 November 1957.
6. A locally designed outline of the new "hot cell" was presented by Lt Johnson for consideration. Colonel Wood read portions of minutes of the Post Planning Board, concerning the "hot cell," wherein they advised they could not approve this project without additional justification for the need of same. Comments were invited as to how much money should be spent on the "hot cell." Colonel Wood presented the question as to whether or not we should go for a new "hot cell;" asking what chances we have of getting \$80,000 for this project in the near future. Suggestion was made by Colonel Bacon that the building be constructed of concrete and located adjacent to the laboratory, rather than next to Classroom Q. Colonel Wood pointed out the advantages of using an aluminum roof rather than concrete. Colonel Cameron stressed the fact that sometimes past operations have exceeded the capacity of our facilities to handle the situation, therefore, inviting new difficulties.
7. In the past, as an economy measure, unencapsulated cobalt has been purchased and Colonel Wood stated that we would not buy any more bargain lots of loose cobalt. Future policy will prohibit purchase or approval of orders for loose cobalt. Motion was made and approved not to encapsulate large quantities of cobalt 60 or other radioactive isotopes.
8. Major Beach advised that the Chemical Corps School had received a letter from the British Embassy, requesting advice in setting up a radiological section and field. He suggested appointing Lt Powell to assist them. Colonel Wood pointed out that it might be well for Lt Powell to assist them by correspondence through the Embassy in Washington.

9. Colonel Wood proposed sending the "hot cell" plans to Oak Ridge. Major Hinman advised that Post had been requested to put this project in their budget but they cannot do so without the necessary information and specifications.

10. Inventory of sources and tags was discussed. Lt Johnson presented a sample of the tag. Colonel Wood recommended that 1,000 tags be purchased now.

11. Comparable test on film badges was returned from Lexington Signal Depot. Calibration curve from Lexington was in error. Our calibration was smooth and theirs irregular. Recommendation was made that another series of test curves be obtained from Lexington Signal Laboratories.

12. A job description for a Health Physics Instructor, GS-11, was presented to Colonel Wood by Lt Johnson. No discussion.

13. Lt Johnson advised that the Atomic Energy Commission License had been extended for one year - and presented License to Colonel Wood. Lt Johnson pointed out that a discrepancy exists concerning the allowable millicuries of Strontium 90. Lt Powell will write a letter to AEC, requesting clarification.

14. Suggestion was made by Colonel Bacon that Major Gittes be appointed a member of the Isotope Committee. Motion made and seconded. Recommendation was approved.

15. Lt Johnson advised that they were in the process of cleaning up Pelham Range, fencing burial ground, filling in hole, and bulldozing the roads before the arrival of the Pathfinders Group from Fort Benning on 20 November 1957.

16. Lt Powell recommended putting up a permanent marker (brass type) to be placed in concrete on the burial ground at Pelham Range. Engineers can make a marker of this type. ↵

17. Major Beach advised that a new SOP has been written, separating Health Physics Group from Radiological Branch, and placing Health Physics directly under the supervision of the Chief of Technical Division. Colonel Wood expressed approval of this action.

18. Meeting adjourned at 0830 hours.

*C. H. Wood*

C. H. WOOD  
Colonel, CmlC  
Chairman

U. S. ARMY CHEMICAL CORPS SCHOOL  
FORT MCCLELLAN, ALABAMA

SPECIAL ORDER  
NUMBER 36

10 October 1957

1. Fol Off are apt members of the U. S. Army Chemical Corps School ISOTOPES Committee (Ref: Memo Nr. 5, this School, 9 Oct 1957):

COL CECIL H. WOOD, 0288922, CmlC	Chairman
COL JOSEPH M. CAMERON, 029180, MC	
LT COL JOHN A. BACON, JR., 0272259, CmlC	Deputy Chairman
MAJ JOHN B. BEACH, 025978, CmlC	
CAPT ARCHIE L. STAMPER, 064222, CmlC	
1ST LT CONRAD M. KNIGHT, 04020176, CmlC	
1ST LT WILLIAM G. POWELL, 04001720, CmlC	
2D LT VICTOR V. JOHNSON, 04051283, CmlC	Recorder

2. Fol Off are asgd add dy w/Health Physics Group as indicated:

MAJ JOHN B. BEACH, 025978, CmlC	Chief
CAPT ARCHIE L. STAMPER, 064222, CmlC	Deputy Chief
1ST LT CONRAD M. KNIGHT, 04020176, CmlC	Radiological
	Safety Officer
2D LT VICTOR V. JOHNSON, 04051283, CmlC	Asst Radiological
	Safety Officer

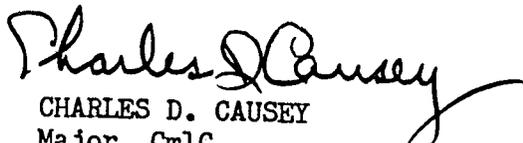
3. Paragraph 3, Special Order Number 19, this school, cs, is revoked.

4. VOCCO 25 Sept 57 cfm as fol: MAJ BRUCE M. WHITESIDES, 049707, CmlC reld PDY Cml Log Adv MOS 7314 and asgd PDY Instr Log MOS 82625.

5. SMOP 1 SO 32 dtd 16 Sept 57 as reads MOS 768.10 IATR 542.60 and as reads FSAC "A" IATR FSAC "C".

FOR THE ACTING COMMANDANT:

OFFICIAL:

  
CHARLES D. CAUSEY  
Major, CmlC  
Secretary

CHARLES D. CAUSEY  
Major, CmlC  
Secretary

DISTRIBUTION:

A

Isotope Committee Meeting

1958a Meeting, 8 January 1958. Record Group 338, Box 5, Accession 72A1094.  
Washington National Records Center, Suitland, Maryland.

# U.S. ARMY CHEMICAL CORPS SCHOOL

FORT McCLELLAN, ALABAMA

IN REPLY REFER TO:

## MINUTES - ISOTOPE COMMITTEE MEETING

The meeting was called to order at 1400 hours, 8 January 1958. Those present were: Colonel Wood, Colonel Cameron, Lt Colonel Bacon, Major Beach, Captain Stamper and Lieutenants Knight and Johnson.

Major Puckett is now the new Radiological Safety Officer, and as such, is now a member of the Isotope Committee.

Lt Powell's membership in the Isotope Committee is discontinued due to a change of duty station.

Cesium capsules are in the process of being encapsulated in brass capsules. The plastic capsules which were leaking have been reencapsulated. The remainder will be encapsulated as soon as lead pigs of sufficient size are available from the machine shops.

The second test run on Lexington Film Badges will be returned to the Signal Depot within the week for checking the accuracy of our photodosimetry process.

The letter informing AEC of the amount of Sr<sup>90</sup> that we have on hand has been forwarded. The By-Product License level is 100 millicuries. We have in our possession 335 millicuries.

DF's have been written requesting fencing and filling of the new burial ground, bulldozing and grading of the roads in the survey area and burning of the vegetation from the area. Colonel Wood stated that Major Hinman would procure the material needed for construction of a fence around the burial area. 

Lt Knight stated that a brass marker had been designed for marking the burial ground. Colonel Wood said that Major Hinman could procure the necessary brass markers if we furnish him the design. 

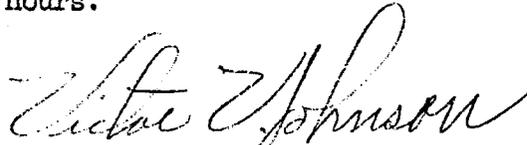
Brochures were presented on forthcoming scientific meetings. A Nuclear Congress is to be held in Chicago on 17-21 March 1958 and a Health Physics Society Meeting at the University of California in June. Contingent upon the availability of funds for this type of travel, a representative will be sent from the Isotope Committee.

MINUTES - ISOTOPE COMMITTEE MEETING (CONT'D)

Three alternatives and costs of each were presented on the design of a new "hot cell." It was agreed unanimously by the Isotope Committee that the "hot cell" should be made an addition to the southwest wing of the present Radiological Laboratory. Drawings of the proposed cell were presented and discussed. It was decided that the drawings should be taken to AEC at Oak Ridge for comments and approval. It was recommended that a telephone call be made to Mr. Hitch arranging a suitable meeting time. Lt Knight said that all drawings and plans necessary for going to Oak Ridge could be completed by Wednesday, 15 January 1958.

It was suggested that, if necessary, Colonel Allen, from the Chemical Corps Engineering Command, would assist us in making blueprints for the "hot cell." Colonel Wood suggested that a scale model of the proposed "hot cell" be constructed by Training Aids Branch for use as an aid in building the cell and also as a training aid in classes.

Meeting adjourned at 1530 hours.



VICTOR V. JOHNSON  
2/Lt, CmlC  
Recorder, Isotope Committee

APPROVED:



C. H. WOOD  
Colonel, CmlC  
Chairman, Isotope Committee

8 Jan

### ISOPOPE COMMITTEE MEETING AGENDA

1. Cesium capsules are in the process of being encapsulated in brass capsules. The plastic capsules which were leaking have been encapsulated. The remainder will be encapsulated as soon as lead pigs of sufficient size are available from the machine shops.
2. The second test run on Lexington Film badges will be returned to the Signal Depot within the week for checking our photodosimetry process.
3. The letter requesting an increase in the amount of  $\text{Sr}^{90}$  that we are licensed for has been forwarded to AEC. The By-Product license level is 100 millicuries. We have in our possession 335 millicuries.
4. DF's have been written requesting fencing and filling of the new burial ground, bulldozing and grading of the roads in the survey area and burning of the vegetation from the area.
5. A brass marker has been designed for marking the burial grounds. It is now being talked over with Training Aids Branch as to its construction.
6. Three alternatives are now available for constructing a new hot cell. A summary of the cost, feasibility, and convenience of each of the locations and structures follows.

#### Three Alternatives:

1. Completely new building and hot cell located in rear of Radl Lab.
2. Remodeling of Building 3175 and construction.
3. Construction of a room to contain a hot cell on the southwest wing of the Radl Lab.

COST OF MATERIALS FOR CELL	ALTERNATIVES		
	(1)	(2)	(3)
Total concrete for walls and floor slab	\$5,000	\$5,000	\$5,000
Lead doors (lead available at Lab)	3,500	3,500	3,500
Shielding Window (Est.)	5,000	5,000	5,000
Stainless Steel covering in Cell	1,000	1,000	1,000
Steel for covering top of Cell	800	800	800
Utilities: Plumbing, Ventilation & Electrical (TID 5280)	5,000	5,000	5,000
Cost of outer building	26,000 (Butler)	** (See below)	
Walls		900	900
Roof		500	500
Total for Cell and Building without Equipment	46,000	21,700**	21,700

\*\*The cost for alternative #2 does not include cost of:

1. Removing roof from present building.
2. Removing portions of walls so contractors can work inside building.
3. Extending all utilities to this area.

Alternative #1 must be excluded because of cost. Alternative #2 and #3 will cost approximately the same the differentiation being in the notes above.

The location of the hot cell within the Radl Laboratory also classes this as remodeling an existing structure.

This preliminary cost estimate does not take into consideration the cost of equipment to be used in operation of the cell.

# DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

FILE NO.

SUBJECT

Summary of Corrective Action

TO

FROM

DATE

COMMENT NO. 1

Isotope Committee

Rad Safe Officer

7 Jan 58

The following is a summary of actions taken by the Radiological Branch in regard to the recommendations made by the U. S. Army Environmental Health Laboratory on 28 May 1957.

- a. A locally designed metal tag has been forwarded to Purchasing and Contracting for local manufacture.
- b. Same as sub paragraph a.
- c. Accomplished by initiation of a daily inventory of sources.
- d. Leakage tests on all radium sealed sources are being conducted every 3 months. Leakage tests at Pelham Range are conducted on 5-10% of the sources every 6 months.
- e. "Hot Cell" design and location are still being studied.
- f. Signs have been placed on all contaminated material and it is being safely stored.
- g. No contaminated material used for training exists.
- h. An adequate fence around Pelham Range has been erected.
- i. Accomplished.
- j. No action necessary.
- k. Reference sub-paragraph "C".
- l. Accomplished by erection of combination barbed—hog wire fence.
- m. AEC does not consider it necessary to decontaminate old burial ground if isotope has a half-life of one (1) year or less. Material in old burial ground has been identified as Tantalum (half-life 115 days).
- n. Fence materials have been requested.

**SUBJECT: Summary of Corrective Action (continued)**

**TO Isotope Committee**

**FROM Rad Safe Officer**

**DATE 7 Jan 58**

**e. Commanding General, Chemical Corps Material Command has disapproved use of new burial ground, therefore no new burials have been made.**

**p. Arrangements have been made with Lexington Signal Depot for quarterly accuracy checks. The first check has been completed and the second is now in progress.**

*Conrad M Knight*  
**CONRAD M KNIGHT**  
**1st Lt      ColC**  
**RADL SAFE OFF**

E X T R A C T

Hqs, USA Environmental Health Laboratory of the Army Medical Service, Army Chemical Center, Maryland - REPORT OF RADIATION PROTECTION SURVEY NO. 2672R75-57, THE CHEMICAL CORPS SCHOOL, CHEMICAL CORPS TRAINING COMMAND, FORT McCLELLAN, ALABAMA, 27, 28 MAY 1957..

\* \* \* \* \*

5. RECOMMENDATIONS.

- a. Label all radioactive sealed sources with serial numbers and radiation caution symbols; identify the radioactive material and specify the curiage and date of curiage determination.
- b. Label all radioactive source holders as required by paragraph 20.203 of the AEC regulations.
- c. Maintain an inventory of specific sources so that the location of each numbered source may be readily determined.
- d. Conduct leakage tests of all radium sealed sources and other radioactive sealed sources as required by AEC regulations. The radium sources should be tested every 3 months. Records of test results should be maintained.
- e. Construct a permanent, completely enclosed, "hot cell." The barriers should be of uniform density. Radiographic examinations should be made of all structural joints. The barriers should be of sufficient thickness to reduce the exposure rate at any accessible area outside the cell to not more than 100 milliroentgens per 40-hour-weekly-work-shift when the maximum anticipated quantity of the highest energy emitter likely to be handled is positioned in the cell in the most hazardous practical location. The curiage handling capacity of the cell should be posted in view of the operator so that he may know when operational time should be limited to prevent overexposure. Provisions should be made in the design of the cell for the routine or emergency handling of radioactive material which presents an internal radiation hazard.
- f. Post conspicuous signs on all contaminated material and store the material in a safe place.
- g. Decontaminate all contaminated material which is not being used for training purposes.
- h. Either erect a 7' high, chainlink fence, or equal, around the present radiation area within Pelham Field; post the fence with signs as required by paragraph 20.203(c) of AEC regulations; and lock the entrance,  
or lock the entrance to the present barbed wire enclosure; erect an additional fence around the sources at such a distance that the exposure rate at the fence line does not exceed 300 mr/hr; post the fence with signs as required by paragraph 20.203(c) of AEC regulations; and indicate the exposure rates on the signs.

E X T R A C T - MEDEI-R 726.2 Rpt of Rad Prot Sur #2672R75-57 (Ft McClellan)  
dtd 27, 28 May 57

i. Remove a randomly selected low curiage sealed source from the Pelham Field area every three months and examine the source for leakage. If the source container shows signs of leakage or deterioration remove all the sources from Pelham Field and reincapsulate them.

j. Any source removed from Pelham Field area should be reincapsulated in the Chemical Corps School designed brass capsule prior to further use.

k. Provide a suitable storage site for the radioactive material. Insofar as practicable individual source holders should be provided. The source holders should be conspicuously posted to show the quantity of identity of the respective sources and the remote handling and shielding equipment required to effect a transfer from the source holder. The area should be of sufficient size and layout to permit the safe handling of sources and the source holders. The area should be inaccessible to unauthorized persons.

l. Render the old burial ground inaccessible to children pending completion of decontamination.

m. Decontaminate the old burial ground.

n. Fence and post the new burial ground.

o. Discontinue the use of the new burial ground until specific approval of its use has been obtained from the AEC and Commanding General, Chemical Corps Materiel Command (see par 7, AR 755-380).

p. Make arrangements with either the Lexington Signal Depot or the National Bureau of Standards to submit Chemical Corps School film badges for an annual accuracy check.

6. CONCLUSION. When the recommendations of this report have been effected all reasonable precautions will have been taken to protect persons from needless exposure to ionizing radiation and the radiologic protection program at the Chemical Corps School will be in consonance with the recommendations of the National Committee on Radiation Protection and Measurements, the pertinent Army Regulations, and the AEC regulations.

1 Incl

CmlC Sch - SOP  
"Work Involving  
Radiation Hazards"

/s/t/ CHARLES E. COMER  
Captain, MSC  
Chief, Radiologic Hygiene Division

APPROVED:

/s/ Edward J. Dehne  
EDWARD J. DEHNE  
Lt Colonel, MC  
Commanding

16 August -

MEMORANDUM FOR THE DIRECTOR, HEALTH, EDUCATION AND WELFARE DEPARTMENT

7 sources - no leakage  
Tested by Lt Knight - 15 August

4 miles - fences needed  
already in

Source strength - 7 containers/hour

35 curies source

Material obtained from the AEC and transferred to the Chemical Corps

4 trucks - 4 trucks buried in  
post - signs up

When the recommendations of this report have been effected  
All responsible precautions will have been taken to protect persons from needless  
exposure to ionizing radiation and the radiological protection program at the  
National Institute of Standards and Technology, the Department of Energy,  
and the Environmental Protection Agency  
115 days

UNITED STATES DEPARTMENT OF HEALTH, EDUCATION AND WELFARE  
BUREAU OF RADIATION PHYSICS

APPROVED:  
RICHARD J. DIBBLE  
Director

Isotope Committee Meeting  
1958b Meeting, 9 April 1958. The Chemical Corps School, Fort McClellan, Alabama.

U. S. ARMY CHEMICAL CORPS SCHOOL  
FORT MCCLELLAN, ALABAMA

*File*

9 April 1958

MINUTES-ISOTOPE COMMITTEE MEETING

The meeting was called to order at 0910 hours, 9 April 1958. Personnel attending were: Colonels Wood and Cameron, Majors Puckett, Gittes and Beach, Lieutenants Knight and Johnson, and Mr. Ogar.

The minutes of previous meeting were read and approved.

Discussion was opened on the "hot cell." The preliminary cost estimate has been received from Post Engineers and is \$62,650. This does not include equipment for the cell. Colonel Wood stated there is a possibility that money may become available for this construction near the end of FY 58. Mr. Ogar stated that a letter should be sent forward through U. S. Army Chemical Corps Training Command to Post, requesting completion of preliminary plans for the "hot cell" with a view toward including it in the MCA FY 59 program as emergency construction. Colonel Wood suggested this be done immediately.

Leak testing was accomplished on twenty of the sources at Pelham Range. There is one possible leaker which is to be rechecked.

Fencing for the burial ground will be available by the end of this week. Construction should be completed by the end of next week. Bulldozers have cleared a path for the fence and constructed drainage for the burial site. The survey area on Pelham Range was burned by Post Engineers under the supervision of Radiological Safety Office, on 2 April 1958.

Improvements to radiological facilities include:

- a. Cost for transportation of laboratory sources and pigs around the laboratory. It will confine possible contamination and make monitoring for it easier.
- b. A change station for personnel working in a contaminated area is to be constructed in the laboratory.
- c. A modification to the survey field is to be made which will allow the pattern to be changed easily. It will consist of installing source wells for a ground zero circle and various "hot spots."

*Victor V. Johnson*

VICTOR V. JOHNSON  
1/Lt, CmlC  
Recorder, Isotope Committee

RECOMMEND APPROVAL:

*C. H. Wood*  
C. H. WOOD  
Colonel, CmlC  
Chairman, Isotope Committee

*Carl V. Burke*  
APPROVED  
CARL V. BURKE  
Colonel, CmlC  
Commandant

Isotope Committee Meeting

1958c Minutes, 13 August 1958. Record Group 338, Box 5, Accession 72A1094.  
Washington National Records Center, Suitland, Maryland.

U. S. ARMY CHEMICAL CORPS SCHOOL  
Fort McClellan, Alabama

CMLTC-SDI-T

13 August 1958

MINUTES OF ISOTOPE COMMITTEE MEETING

The meeting was called to order at 1030 hours, 13 August 1958. Present were Colonel Cameron, Major Puckett, Major Gittes, Captain Stamper, Mr. Ogar, Lieutenants Knight and Johnson, and Major Carew (non-member).

A motion was passed for disposing of all radioactive material presently licensed to the School, with the exception of the sources located at Pelham Range and several laboratory sources required for calibration of RADIAC instruments. Mr. Ogar will determine the availability of obtaining funds and materials for the construction of appropriate shipping containers for disposing of this excess material.

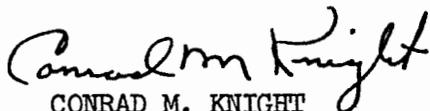
All radioactive sources and wells have been removed from the Field Familiarization Course located at Pelham Range.

A granite marker for the radioactive materials burial ground has been received. The marker is inscribed with the date the burial area was closed, the types and amounts of radioisotopes buried, and the organization performing the burial.

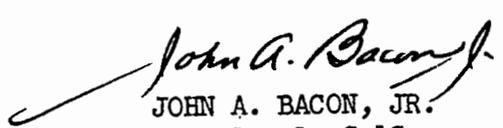
The School's Radiological Safety SOP is being revised and will be circulated to all members of the isotope committee and the AEC By-product Licensing Branch for approval. Particular emphasis is being placed on the delineation of responsibilities of the Radiological Safety Office and Radiological Branch.

Lt Johnson's membership in the Isotope Committee is discontinued due to discharge from the service.

Meeting adjourned at 1140 hours.

  
CONRAD M. KNIGHT  
1ST LT, CMLC  
Recorder, Isotope Committee

RECOMMEND APPROVAL:

  
JOHN A. BACON, JR.  
Lt Colonel, CMLC  
Acting Chairman, Isotope Committee

APPROVAL:

  
CARL V. BURKE  
Colonel, CMLC  
Commandant

RADIOLOGICAL SAFETY OFFICER'S REPORT FOR MEETING OF ISOTOPE  
COMMITTEE, 11 AUGUST 1958

1. PROJECTS COMPLETED.

a. All sources and source walls have been removed from the field familiarization area at Palham Range.

b. The granite marker for the radioactive materials burial ground has been received.

c. A new Los Alamos type Dosimeter has been received and is in operation.

2. REMAINING PROJECTS.

a. A complete calibration of the AM-10M-1 was conducted during the period.

b. A survey of the radioactive materials storage area indicates that several of the pigs are overloaded with sources.

3. INCIDENTS.

a. Gate Number 2 to Radl Area Number 3, Palham Range, was found damaged to the extent that it is impossible to secure it by lock and chain. A gate post support had been broken and the gate hinges were twisted greater than 1/4 turn. Damage has been reported to the Operations Division.

b. On 24 July 1958 a film badge signed to CWO Samuel J. Mowery, Hat Transport Company, Ft Benning, Ga., indicated an extremely high dosage. This dosage is indicated by the low range film. The high range film, included in the same pocket, will be developed on 12 August 1958. This is an attempt to prove willful tampering of the film badge. A draft letter of the findings will be prepared by the Radl Safety Officer for the Commandant's approval and forwarding through channels to the individual's parent unit for necessary disciplinary action.

  
CHARLES H. FICKER  
Major, Inf  
Radiological Safety Officer

Isotope Committee Meeting

1959a Meeting, 6 March 1959. Record Group 338, Box 5, Accession 72A1094.  
Washington National Records Center, Suitland, Maryland.

US ARMY CHEMICAL CORPS SCHOOL  
FORT McCLELLAN, ALABAMA

6 March 1959

MINUTES OF ISOTOPE COMMITTEE MEETING

The meeting was called to order at 1500 hours, 6 March 1959. Present were: Colonels Parks and Cameron; Lt Colonels Bacon, Shapira and Carew; Captain Buddee and Lt Knight. Non-members in attendance were: Major Colgin, Lt Young and Mr. Ogar.

Lt Young, Radiological Branch, presented two proposals for modifications of the Radiological Training Area located at Pelham Range. Proposal A gave an estimated cost for repairing the existing area whereas proposal B estimated the cost required for construction of a new Radiological Area. After discussion, it was agreed that these proposals would be forwarded.

It was noted that Mr. Gerald H. Daly, US Atomic Energy Commission, Savannah River Operations Office, will visit the School on 16 and 17 March. Purpose of visit is to inspect the School's radioisotope program, physical facilities and written records.

In the future, class schedules will reflect a safety officer for all courses receiving training in the Radiological Area.

A letter has been forwarded to the Commanding General, Materiel Command requesting disposal instructions and funds for shipment of the radioactive waste located at the rear of the Radiological Laboratory Building. At present there are twenty-three (23) each concrete filled 55 gallon drums and three (3) each lead containers requiring disposal.

*Conrad M Knight*

CONRAD M. KNIGHT  
1st Lt, CmlC  
Recorder, Isotope Committee

RECOMMEND APPROVAL:

*L. A. Parks*

L. A. PARKS  
Colonel, CmlC  
Chairman, Isotope Committee

APPROVAL:

*Carl V. Burke*

CARL V. BURKE  
Colonel, CmlC  
Commandant

Isotope Committee Meeting

1959b Meeting 14 April 1959. Record Group 338, Box 5, Accession  
72A1094. Washington National Records Center, Suitland, Maryland.

US ARMY CHEMICAL CORPS SCHOOL  
FORT McCLELLAN, ALABAMA

14 April 1959

MINUTES OF ISOTOPE COMMITTEE MEETING

The meeting was called to order at 1345 hours on 14 April 1959. Present were: Colonel Parks; Lt Colonels Bacon and Shapira; Captain Buddee and Lt Knight. Non-member in attendance was: Mr. Ogar.

A special Isotopes Committee Meeting was conducted on 6 April 1959 in view of the proposed forthcoming Armor Radiac Instrument Test. The minutes of this meeting are attached.

It was moved and passed that the following radioisotopes be purchased: 3 mc Mercury - 203, 2 mc Bismuth - 210, 3 mc Phosphorous - 32, 5 mc Rubidium - 86, 5 mc Rhenium - 186, 2 mc Silver - 111, and 3 mc Yttrium - 91. Subject isotopes will be used in scaler instruction.

Based on information submitted by the Radiological Safety Officer, it was determined that necessary labor and cost to remove the contents from the large silver lead container, located at the rear of the Radiological Laboratory, would be excessive. The contents do not exceed 100 curies of radioactive material or a monetary value of \$200.00. In addition, the container is exceedingly radioactively hot. Therefore appropriate disposal instructions will be obtained from MATCOM.

1 Incl  
a/s

  
CONRAD M. KNIGHT  
1st Lt, CmlC  
Recorder, Isotope Committee

RECOMMEND APPROVAL:

  
L. A. PARKS  
Colonel, CmlC  
Chairman, Isotope Committee

APPROVAL:

  
CARL V. BURKE  
Colonel, CmlC  
Commandant

## Report of Special Isotopes Committee Meeting

Commenced: 1600 hours 6 April 1959

Members present: Col L. A. Parks  
Col J. M. Cameron  
Lt Col J. A. Bacon  
Lt Col N. I. Shapira

Members absent: Lt Col T. E. Carew  
1/Lt C. M. Knight

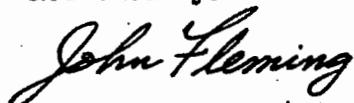
1. The Isotopes Committee approved the purchase from the Union Carbide Nuclear Company, Oak Ridge, Tennessee, 50 - 16 curie Co-60 sources with the stipulation upon receipt they will be stored in the closed shipping pig until such time as a detailed plan for opening, handling, and utilization in the temporary field at Pelham Range has been approved, in detail, by the Isotopes Committee.

2. Detailed plans for the Air and Armor phases of the radiological tests being performed at Pelham Range shall be submitted to the committee.

3. The difference in the amount allotted for the Armor Board tests (\$6000) and the cost of the radioisotope (approximately \$4650) is available for the purchase of necessary handling equipment.

4. Meeting adjourned 1645 hours.

Recorded by:



JOHN FLEMING, 1/Lt CmlC

Isotope Committee Meeting

1959c Meeting 7 October 1959. Record Group 338, Box 5, Accession  
72A1094. Washington National Records Center, Suitland, Maryland.

US ARMY CHEMICAL CORPS SCHOOL  
FORT McCLELLAN, ALABAMA

CMLTC-SDI-T

7 October 1959

MINUTES OF ISOTOPE COMMITTEE MEETING

The meeting was called to order at 1300 hours on 7 October 1959. Present were: Colonels Parks and Cameron; Lt Colonels Danald and Shapira; and Lt Knight. Non-member in attendance was: Major Colgin.

On 5 October 1959 two students of the 4th Chemical Entry Course received excessive dosages while performing a radiological survey exercise at Pelham Range. A thirty-day report as specified in Part 20, Title 10, Code of Federal Register will be forwarded through channels.

It was moved and passed that the following changes in the Committee's membership, subject to AEC approval, would take place in order to fill existing vacancies:

Lt Colonel George E. Danald to replace Lt Colonel John A. Bacon, Jr. as Chief, Technical Division.

Captain Harold E. Shaw to replace Lt Colonel Thomas E. Carew as Nuclear Effects Engineer.

1st Lt Barry T. J. Balint to act as Assistant Radiological Safety Officer in addition to his other duties.

A motion was made and passed to initiate action to substitute Major Clarence H. Colgin for Captain Rudolph S. Buddee as "Individual User" on School's AEC Byproduct Material License, due to change in duty assignments.

It was noted that the School's AEC License has been amended to authorize possession of 130 curies of Cesium - 137. This isotope is contained in the ANUDM-1A Radiac Calibrator.

CMLTC-SDI-T  
Minutes of Isotope Committee Meeting

7 October 1959

The meeting adjourned at 1420 hours, with the next meeting scheduled for 10 November 1959.

*Conrad M. Knight*

CONRAD M. KNIGHT  
1st Lt, CmlC  
Recorder, Isotope Committee

APPROVAL:

APPROVAL:

*L. A. Parks*  
for *Lt Col*  
L. A. PARKS  
Colonel, CmlC  
Chairman, Isotope Committee

*William H. Greene*  
WILLIAM H. GREENE  
Colonel, CmlC  
Commandant

Isotope Committee Meeting

1959d Meeting 17 November 1959. Record Group 338, Box 5, Accession 72A1094.  
Washington National Records Center, Suitland, Maryland.

US ARMY CHEMICAL CORPS SCHOOL  
FORT McCLELLAN, ALABAMA

CMLTC-SDI-T

18 November 1959

MINUTES OF ISOTOPE COMMITTEE MEETING

The meeting was called to order at 0830 hours on 17 November 1959. Present were: Colonels Parks and Cameron; Lt Colonel Shapira; Captain Shaw and Lt Knight. Non-members in attendance were: Major Colgin, Captain Peterson and Lt Martin.

A Radiological Branch proposal to fabricate a simulated indoor aerial radiological survey device, utilizing several small cobalt-60 sources, was approved.

The report of the last AEC inspection, received on 14 November 1959, was reviewed. All deficiencies noted have been corrected and a reply delineating these corrective actions will be prepared by the Radiological Safety Officer.

Due to Colonel Parks' departure, appropriate information necessary for appointing his replacement, Colonel Bartling, as the School's AEC Licensee must be submitted. This will be accomplished by the Radiological Safety Officer.

During the period 7 October 1959 to 1 November 1959, three instances of overexposures occurred. Two individuals received excessive dosages while performing annual maintenance of the source wells located at Pelham Range. The third individual was overexposed while acting as a driver for the 4th Chemical Entry Course. It is believed that this man was the driver for the students who were overexposed in October 1959 (reference Minutes of Isotope Committee dated 7 October 1959). A thirty-day report as specified in Part 20, Title 10, Code of Federal Register will be forwarded through channels.

*Conrad M. Knight*

CONRAD M. KNIGHT  
1st Lt, CmlC  
Recorder, Isotope Committee

APPROVAL:

*L. A. Parks*

L. A. PARKS  
Colonel, CmlC  
Chairman, Isotope Committee

APPROVAL:

*William H. Greene*

WILLIAM H. GREENE  
Colonel, CmlC  
Commandant

Kingery, Andrew F., CPT, CmlC

1985 After Action Report Discovery and Disposal of a Cobalt<sup>60</sup> Radiation Source 22 January-1 February 1985. U.S. Army Chemical School, Fort McClellan, Alabama.

AFTER ACTION REPORT  
DISCOVERY AND DISPOSAL OF A COBALT-60 RADIATION SOURCE  
22 JANUARY - 1 FEBRUARY 1985

Prepared by:

*Andrew F. Kingery*  
ANDREW F. KINGERY

CPT, CmIC

Health Physics Officer

## REPORT SUMMARY

1. The Rideout Field Radiological Training Area had been in use from 1957 to 1972. There were two fields, the first was in service from 1958 to 1962; the second, larger field, was in service from 1964 to 1972. The original field utilized locally fabricated Cobalt-60 sources emplaced in Area 24C, Pelham Range. This training area was replaced in 1964 by another field, which utilized commercially-procured, serial-numbered Cobalt-60 sources. The field was certified clean to the Atomic Energy Commission (AEC) in 1973.
2. A Cobalt-60 radiation source was discovered in Area 24C, Pelham Range (FN 934325) on 25 Jan 85 during a routine survey. The area was posted and secured. The NRC was provided with an immediate report. The source was packaged and moved to Anniston Army Depot on 26 Jan 85 in preparation for disposal.
3. HQ AMCCOM initiated disposal action under an emergency response contract with Chem-Nuclear Systems, Inc. (CNSI). A representative from CNSI arrived on-site on 29 Jan 85. With assistance from Fort McClellan and Anniston Army Depot, the source was identified as a locally fabricated Cobalt-60 source from the original Rideout Field with an approximate activity of 140 millicuries. The source was stabilized with cement and loaded in a 55 gallon drum on 30 Jan 85. The source was shipped for burial to Barnswell, SC, on 31 Jan 85.
4. Area 24C, Pelham Range, was surveyed on 1 Feb 85 with no contamination found. The area was returned to unrestricted use on 1 Feb 85, with the exception of the original restricted area which will be resurveyed at a later date.

Layfield, Robert L.

1971 Letter Amendment 1, to Mr. Allan W. Rehrig, Deputy Chief, PEMA Execution Division, 2 April 1971. C. U.S. Army Chemical School, Fort McClellan, Alabama.



UNITED STATES  
ATOMIC ENERGY COMMISSION

WASHINGTON, D.C. 20545

APR 2 1971

DML:MB:RLI  
(70-372)  
SNM-344, Amendment 1

Department of the Army  
Office of the Deputy Chief of Staff  
for Logistics  
ATTN: Mr. Allan W. Rehrig  
Deputy Chief  
PEMA Execution Division  
Washington, D.C. 20310

Gentlemen:

Pursuant to Title 10, Code of Federal Regulations, Part 70, Item 8 of Special Nuclear Material License No. SNM-344, dated April 6, 1970, is hereby amended to read as follows:

8. Authorized Use

For use in accordance with the statements, representations and conditions specified in the licensee's application, dated August 4, 1960, and supplements dated May 11, 1961; March 26, and November 4, 1964; February 13, 1967; June 17, 1969; March 18, 1970; and March 22, 1971.

All other conditions of this license shall remain the same.

FOR THE ATOMIC ENERGY COMMISSION

A handwritten signature in cursive script, appearing to read "Robert L. Layfield", is written over the typed name.

Robert L. Layfield  
Materials Branch  
Division of Materials Licensing

601-071

**McAlduff, H. J., Jr. (Appendix D-Licenses Listing)**

1970 Interagency Agreement for Enriched Uranium No. 1003. U.S. Army Chemical School, Fort McClellan, Alabama. This license was amended, renewed and extended for several years through 1973.

## INTERAGENCY AGREEMENT FOR ENRICHED URANIUM

SNM INTERAGENCY AGREEMENT NO. 1003

THIS INTERAGENCY AGREEMENT (sometimes referred to as the "Agreement"), entered into this 24th day of November, 1970, by and between the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission") and US Army Chemical Center and School (hereinafter called the "Agency"), an executive department or independent establishment of the Government of the United States of America or a bureau or office thereof;

WHEREAS, the parties hereto desire to establish the terms and conditions applicable to the distribution of special nuclear material to the agency, pursuant to the Atomic Energy Act of 1954, as amended, whether ordered and received directly from a Commission facility or transferred from a lessee of the Commission;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

### ARTICLE 1 - DEFINITIONS

As used in this Agreement:

- a. The term "Act" means the Atomic Energy Act of 1954, as amended.
- b. The term "base charge" means the dollar amount per unit of normal or depleted uranium or special nuclear material in standard form and specification in effect as of the time any particular transaction under this Agreement takes place, as set forth in schedules published by the Commission in the Federal Register from time to time.
- c. The term "blending" means the altering of the isotopic composition of a quantity of an element by means other than through the irradiation of a material in a nuclear reactor.

201-07

- d. The term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof.
- e. The term "Commission facility" means a laboratory, plant, office, or other establishment operated by or on behalf of the Commission.
- f. The term "Commission's established specifications" means the specifications for purity and other physical or chemical properties of normal or depleted uranium or special nuclear material, as published by the Commission in the Federal Register from time to time.
- g. The terms "consumed" or "consumption" mean the destruction, burnup, loss or disposition of material in such manner that it cannot be economically recovered for further use, material unaccounted for, or changes in the composition of material due to blending of different assays of material or other alteration of the isotopic ratio resulting in the reduction in value of such material.
- h. The term "depleted uranium" means uranium having a weight fraction U-235 of less than 0.00711.
- i. The term "established Commission pricing policy" means any applicable price or charge in effect at the time any particular transaction under this Agreement takes place (i) published by the Commission in the Federal Register, or (ii) in the absence of such a published figure, determined in accordance with the Commission's Pricing Policies. A statement of such Pricing Policies will be furnished Agency upon request. The Commission's published prices and charges, as well as its Pricing Policies, may be amended from time to time.
- j. The term "lessee" means a person who is a party to a Special Nuclear Material Lease Agreement with the Atomic Energy Commission. For the purposes of this Agreement, the term "lessee" also includes another Government agency which has executed a Special Nuclear Material Interagency Agreement with the Commission.
- k. The term "normal uranium" means uranium having 0.00711 weight fraction U-235.
- l. The term "persons acting on behalf of the Commission" means employees and contractors of the Commission, and employees of such contractors, who implement or participate in the implementing of this Agreement pursuant to their employment or their contracts with the Commission.

- m. The term "source material" means (1) uranium, thorium, or any other material which is determined by the Commission pursuant to the provisions of Section 61 of the Act to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.
- n. The term "special nuclear material" means (1) uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of Section 51 of the Act, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing, but does not include source material.
- o. The term "standard form" means the chemical form of normal or depleted uranium or special nuclear material, as published by the Commission in the Federal Register from time to time.
- p. The term "value" means the dollar amount determined by multiplying the applicable base charge by the number or units, or fractions thereof, or normal or depleted uranium or special nuclear material involved, whether or not such material is in standard form or meets the Commission's established specifications; provided, however, where uranium enriched in the isotope U-235 subject to this Agreement has its isotopic ratio altered by the generation of uranium isotopes U-232 and U-233 during irradiation of the material in a nuclear reactor, the term "value" for the purpose of determining provisional payments for consumption of such material, means the dollar amount determined by multiplying the number of grams of U-235 by the base charge per gram of U-235 calculated from subparagraph 3(a) of the Federal Register Notice entitled "Plutonium and Uranium Enriched in U-233; Guaranteed Purchase Prices," 30 F. R. 3886, March 25, 1965, as the same may be amended from time to time.

#### ARTICLE 2 - SCOPE

- a. Unless otherwise provided herein, or in a written agreement between the Commission and Agency, the terms and conditions contained herein shall apply to special nuclear material and related services furnished to Agency by the Commission on and after the date of execution of this Agreement, and to the material, if any, subject to the Special Nuclear Material Interagency Agreement between the Commission and Agency, as of midnight, December 31, 1970, whether ordered and received directly from a Commission facility or obtained from another lessee of the Commission. Nothing herein shall be deemed to prevent Agency

from shipping material covered by this Agreement to any person duly authorized by the Commission to process and use such material. Agency may be relieved of its obligations under this Agreement for such material only in accordance with the terms of this Agreement. Material received by Agency from any source shall be subject to the provisions of this Agreement only if such material is furnished pursuant to an order accepted by the Commission as provided in paragraphs b. and c. below.

- b. Agency shall order material pursuant to this Agreement through the execution and submission of a special nuclear material order form prescribed by the Commission.
- c. Acceptance of Agency's order for material by or on behalf of the Commission shall constitute the Commission's commitment to furnish the material specified in such order subject to the terms of this Agreement. When Agency orders material which is to be obtained from a lessee, this Agreement shall not be applicable to such material until such lessee and the Commission have agreed to the transfer of such material to Agency.
- d. Nothing herein shall be deemed to obligate Agency to order material or to obligate the Commission to furnish material to Agency, or to provide services for Agency with respect to material.

#### ARTICLE 3 - TERM OF AGREEMENT, TERMINATION AND CANCELLATION

- a. Except as otherwise provided herein, the Agency shall have the right to possess and use the material covered by this Agreement until June 30, 1973; provided that material subject to this Agreement furnished to or received by Agency after December 31, 1970, shall not, unless otherwise authorized in writing by the Commission, be used in the course of activities under a license issued pursuant to section 103 or 104 b. of the Act.
- b. Agency may cancel any order for material under this Agreement by notice in writing to the Commission at any time prior to delivery of the material; provided, Agency shall reimburse the Commission for the costs incurred by the Commission in connection with such order, as determined in accordance with established Commission pricing policy in effect at the time such costs are incurred.
- c. The Commission may terminate or suspend in whole or in part this Agreement at no cost to the Commission at any time, by written notice to Agency in the event that (1) the right of Agency to possess material subject to this Agreement expires or is suspended or terminated by any authority having power to take such action,

or (2) Agency shall fail to perform its obligations hereunder and shall fail to take corrective action within 30 days of the date of the written notice of such failure to perform as provided above, unless such failure arises out of causes beyond the control and without the fault or negligence of Agency.

ARTICLE 4 - MATERIAL TO BE FURNISHED BY THE COMMISSION

- a. Except as otherwise agreed to in writing by the Commission and Agency, special nuclear material subject to this Agreement shall be furnished to Agency in standard form in accordance with the Commission's established specifications.
- b. Agency shall pay the Commission's service charges, if any, for withdrawal and packaging, and for any other special service rendered pursuant to Agency's order. Unless such charge or charges are agreed to in the order executed by Agency and the Commission for material, Agency shall pay the Commission its charges for the services rendered pursuant to Agency's order as determined in accordance with established Commission pricing policy in effect at the time such services are rendered. Agency shall also pay the value of material consumed in the rendering of such special services.
- c. If the material delivered by the Commission pursuant to an order executed by Agency and the Commission does not conform to the Commission's established specifications (or to the specifications set forth in an order executed by Agency and the Commission), the responsibility and liability of the Commission and persons acting on behalf of the Commission shall be limited solely to correcting such discrepancies by delivery of material which does conform to the applicable specifications. Neither the Commission nor persons acting on its behalf shall have any responsibility or liability for replacing or furnishing material which Agency obtains directly from a lessee of the Commission. The Commission will pay to the carrier the transportation charges for returning any material obtained directly from the Commission which does not conform to applicable specifications, as well as the transportation charges for shipping conforming replacement material. No service charges will be made with respect to such replacement material, and rental charges for Commission-owned containers in which such material shall be shipped will not commence until 30 days after date of shipment.

- d. It is recognized that material furnished under this Agreement as enriched uranium (U-235) may be consumed in such manner as to reduce the isotopic ratio thereof to the extent that the leased material is no longer special nuclear material as defined in this Agreement. Except as provided in this paragraph, or in paragraph e. below, the resulting normal or depleted uranium will be and remain subject to the provisions of this Agreement as if the material were special nuclear material. Agency's obligations for consumption of such material shall be computed using the value of the normal or depleted uranium. If, in lieu of returning such material directly to a Commission facility as provided in this Agreement, Agency desires to transfer such material to another person and terminate its obligations with respect thereto, the Commission may, at its option, require Agency to pay the value of such material and transfer full custody and responsibility of such material to Agency.
- e. (1) The Commission, upon delivery to Agency of U-233, or uranium enriched in the isotope 233 subject to this Agreement, may direct that such U-233 or uranium enriched in the isotope 233 not be blended with other uranium.
- (2) In the case of blending of normal, depleted or enriched uranium subject to this Agreement with privately-owned uranium other than U-233 or uranium enriched in the isotope 233:
- (A) If, within one hundred twenty (120) days from the date of completion of the blending, the Commission receives the written agreement of all such parties thereto, and
1. The assay (weight percent U-235) of the blended product is higher than that of the Commission-furnished material used in blending, (a) the Commission shall debit Agency's account with the value of such portion of Agency's share of the blended product as does not exceed the value of Agency's Commission-furnished material used in the blending and credit Agency's account with the value of Agency's Commission-furnished material used in the blending; (b) full custody to and responsibility for the blended product so debited to Agency's account shall be deemed to be transferred to the Commission; and (c) Agency shall

pay to the Commission the amount, if any, by which the value of the credited material exceeds the value of the debited material, or

2. The assay (weight percent U-235) of the blended product is lower than that of the Commission-furnished material used in the blend, (a) the Commission shall debit Agency's account with the value of such portion of Agency's share of the blended product as has a feed component which does not exceed the feed component (assuming uranium having an assay of 0.711 weight percent U-235 was used as a feed material) of Agency's Commission-furnished material used in the blending and credit Agency's account with the value of Agency's Commission-furnished material used in the blending; (b) full custody to and responsibility for the blended product so debited to Agency's account shall be deemed to have been transferred to the Commission; and (c) Agency shall pay to the Commission the amount, if any, by which the value of the credited material exceeds the value of the debited material.
- (B) If such written agreement has not been so received by the Commission, unless otherwise agreed to in writing by the Commission, lessees, and owners of privately owned uranium,
1. Agency shall be deemed to have acquired the material on its Agency account that was used in the blending and shall pay the Commission for the value of this material so acquired, and
  2. Full custody to and responsibility for such material shall be deemed to have transferred from the Commission to Agency upon payment to the Commission of the amount due.
- (3) In the case of blending of uranium subject to this Agreement with privately owned U-233 or uranium enriched in the isotope 233, Agency agrees either (A) to secure the Commission's written agreement in advance as to the terms and conditions under which such material may be blended or (B) to accept as conclusive and binding

the Commission's determination in writing as to the consequences of any such blending including the disposition of any blended product and amounts due the Commission and Agency.

- (4) As used in subparagraph e. (2), the term "value" refers to value as of the date of completion of the blending. The feed components specified in subparagraph e. (2) (A) 2. shall be derived from the established Commission standard table of enriching services published from time to time by the Commission in the Federal Register and in effect as of the date of completion of blending.
  - (5) It is hereby agreed that Agency shall be responsible for handling any claims of third parties on account of rights alleged in or in connection with the source material or special nuclear material used in blending.
- f. (1) Agency shall maintain and make available to the Commission for examination, upon reasonable notice, complete and adequate records pertaining to its receipt, possession, use, location, movement, and physical inventories of material subject to this Agreement. Such records shall fully reflect physical measurements, consumption, actual inventories, and the transactions relating thereto. Agency will submit such transfer documents and reports reflecting quantities of material received, physically present, consumed and transferred, with respect to material subject to this Agreement as the Commission may prescribe. Agency will make at least one physical inventory of material subject to this Agreement and in the custody of Agency during each twelve months' period of the Agreement and will insure that such inventories are also made of material subject to this Agreement but in the custody of others.
- (2) Agency shall afford to the Commission, at all reasonable times, opportunity to inspect the material subject to this Agreement and the premises and facilities where such material is used or stored. Agency shall permit the Commission to perform such audit tests and inventory tests (which may include the taking of a reasonable number of samples for physical or chemical analyses but which does not include sampling and destructive testing of fabricated articles except as agreed to by Agency) as the Commission deems necessary for verification of the accuracy of any reports

submitted by Agency to the Commission. The Commission agrees to perform any inventory tests with respect to material subject to this Agreement so as to minimize interference to Agency's processing, delivery schedules, and third-party commitments regarding the material. Agency agrees that no charges for costs or value of any material samples, or for services or equipment, should such be furnished by Agency, provided in connection with the performance of audit tests and inventory tests, shall be made against the Commission; however, the Commission will allow full credit in Agency's account with the Commission for the value of the material included in the samples and the Commission will make no charge against Agency for reconversion of the material samples to standard form. In the event Agency should ship material subject to this Agreement to any other person, or cause such shipment of such material, Agency shall assure that the rights and privileges granted to the Commission under this paragraph shall not be affected by such shipment.

**ARTICLE 5 - RETURN OF MATERIAL TO THE COMMISSION; SPECIAL CHARGES FOR COMMISSION SERVICES**

- a. Agency shall return all material subject to this agreement which has not been consumed upon the expiration or earlier termination of this Agreement, provided, however, that Agency shall have the right to return any such material at any time prior to such date.
- b. Except as otherwise provided herein, material returned by Agency will be returned directly to the Commission in the standard form and in accordance with the Commission's established specifications for return of material in effect as of the date the material is returned.
- c. Material subject to this Agreement transferred to a lessee of the Commission, regardless of the form or specification of such material, shall be deemed to have been returned to the Commission if such lessee, the Commission, and Agency have executed an order covering the material so transferred.
- d. The Commission may at its sole discretion accept material in a form or specification other than as provided in b. above. In such cases, unless the Commission shall determine that acceptance of the material in its existing form is in the best interests of the Government, Agency shall pay a service charge for processing

such returned material so as to enable it to meet the standard form and to satisfy the Commission's established specifications in effect at the time the material is returned. Such charge shall include the Commission's charge for processing, as determined in accordance with the established Commission pricing policy in effect at the time the material is returned and an amount as determined by the Commission, for the value of the material consumed during such processing.

- e. Material subject to this Agreement returned directly to the Commission in the form of uranium hexafluoride shall be shipped only in containers of appropriate size as specified by the Commission. The quantity of such material shipped in a container shall not be less than the Commission-established minimum loading for the type of container used.
- f. All material returned directly to the Commission shall be delivered by Agency to the Commission facility or location specified by the Commission, f.o.b. commercial conveyance at such facility or location. Unless waived by the Commission, Agency shall give the Commission at least fifteen (15) days' written notice of intent to return material directly to the Commission. The Commission will notify Agency promptly after receipt of Agency's notice of intent to return material as to the Commission facility or location designated for return of the material. Agency, at the time of shipment of material, shall notify the Commission facility or other location to which shipment is made of the date and method of shipment, and expected date of arrival.

#### ARTICLE 6 - PAYMENT FOR MATERIAL CONSUMED

- a. Except as otherwise provided herein, Agency shall be responsible for and shall reimburse the Commission for any consumption of material, whether or not such consumption is due to the fault or negligence of Agency or any other cause occurring from the time of delivery of such material to Agency and until such material has been returned to the Commission as provided herein.
- b. Agency shall make reports to the Commission, on forms prescribed by the Commission, to accurately reflect all consumption of material as then known to Agency. In reporting material as consumed, Agency shall make reasonable effort to accurately fix the time of such consumption on the basis of a specific occurrence or in accordance with procedures and methods of calculating consumption accepted by the Commission.

- c. Except as otherwise provided herein, the amount due the Commission for material consumed shall be the value of such material computed in accordance with this Agreement as of the time of such consumption. Agency may, and shall when required by the Commission, pay on a provisional basis for material consumed. Full custody to and responsibility for all consumed material, other than material the value of which has been reduced by alteration of its isotopic ratio, shall be deemed transferred from the Commission to Agency upon final payment to the Commission of the amount due.

#### ARTICLE 7 - OTHER AUTHORITY.

Nothing in this Agreement shall be deemed to require Agency to pay the Commission's charges with respect to materials or services subject to this Agreement, or to observe other specific provisions of this Agreement, if the Commission, in accordance with statutory authority or other authority available to it, determines that such charges, or other provisions are not applicable.

#### ARTICLE 8 - ESTABLISHMENT OF SPECIAL NUCLEAR MATERIAL ACCOUNT

- a. The Commission will establish a special nuclear material account for Agency to which will be debited, as provided herein, the amount or amounts equal to the value of the material subject to this Agreement. Such account will be credited, as provided herein, with the amount or amounts equal to the value of the material returned or paid for in accordance with this Agreement. The value of material reflected in this account after credit for the value of material returned and for payments for material consumed shall represent the amount due to the Commission for material not returned or paid for. In the event material paid for provisionally as having been consumed is later re-established in Agency's account, said account shall be debited as of the date of refund (or appropriate setoff) of such payment to Agency as provided in paragraph c. of Article 10 hereof, with the amount or amounts equal to the value of such material at the time of such re-establishment in Agency's account.
- b. Except as otherwise provided in this Agreement, Agency's account will be debited for material furnished as of the date material is delivered to Agency, provided that in the case of leased material transferred directly from a lessee of the Commission, the debit will be made as of the effective date specified in the order executed by Agency, the lessee, and the Commission for such material. Except as otherwise agreed to by the Commission, such

effective date shall not precede the date of the Commission's execution of such order by more than 30 days and such date shall also be set forth in the applicable transfer document.

- c. Agency's account will be credited for material returned to the Commission or transferred to a lessee only when material is returned or transferred in accordance with Article 5. Except as otherwise provided in this Agreement; Agency's account will be credited for material returned directly to the Commission as of the date the material is delivered to a location specified by the Commission pursuant to this Agreement. Credit for material transferred to a lessee will be made as of the effective date specified in the order executed by the lessee, the Commission, and Agency. Credit for material paid for will be made as of the date payment is received by the Commission.
- d. Whenever the Commission changes any applicable base charge as provided in Article 9 below, the value of material recorded in Agency's account will be recomputed at the new base charge, provided, that the value of material consumed as of the effective date of such change shall not be recomputed. Subsequent to the effective date of the change in the applicable base charge, the new base charge will be used in determining the value of material consumed.
- e. Agency will be promptly notified of the debits and credits made to its account as the result of shipments, consumption, or transfers of material, and of any changes in the value of material in such account as the result of changes in the applicable base charges. Agency will promptly notify the Commission of any disagreement with, or alleged discrepancies, or errors in such notices.

#### ARTICLE 9 - CHANGES IN BASE CHARGES AND SPECIFICATIONS

- a. The base charges, standard form, and specifications for material furnished pursuant to this Agreement are subject to change by the Commission in accordance with the Act.
- b. Any increase in base charges or any changes in the standard form or in the Commission's established specifications shall require at least 180 days' notice to Agency by publication or otherwise.

ARTICLE 10 - PERFORMANCE OF AEC OBLIGATIONS - BILLING

- a. The Commission may fulfill its obligations under this Agreement through the operator of any of its facilities. No such operator is authorized to modify the terms of this Agreement, waive any requirement thereof, or settle any claim or dispute arising hereunder.
- b. Billings for amounts due the Commission under the Agreement will ordinarily be made
  - (1) following the performance of any service, and
  - (2) semiannually for consumption of material.
- c. All billings and payments made on a provisional basis are subject to adjustment to recognize actual or calculated amounts, enrichment, isotopic content, and specifications of material involved. Whenever Agency has provisionally paid for material reported as having been consumed and such material is later re-established in Agency's account, the Commission shall refund to Agency (or appropriately setoff against any amounts due the Commission) the amount paid by Agency for such material. The adjustments provided for in this paragraph will not subject Agency or the Commission to liability for interest.
- d. All bills rendered by or on behalf of the Commission are due 30 days from the date of invoice.

ARTICLE 11 - TIME OF DELIVERY

The Commission will make reasonable efforts to deliver material at the time or times stated in orders for material subject to this Agreement.

ARTICLE 12 - DELIVERY - F.O.B. POINT

- a. Material furnished directly from a Commission facility will be shipped f.o.b. Agency's vehicle or commercial conveyance at such Commission facility. Delivery of material or containers to Agency or its designee or to a carrier for the account of Agency or its designee shall be deemed delivery of such material or containers to Agency for the purposes of this Agreement.

- b. Unless Agency furnishes a prepared bill of lading, all shipments by the Commission will be made collect on a commercial bill of lading to be converted at destination.
- c. When agency obtains material from a lessee of the Commission pursuant to this Agreement, the Commission shall not be responsible for costs of packaging, shipment, and handling.

ARTICLE 13 - CONTAINERS AND EQUIPMENT -

- a. All shipments of material from the Commission to Agency, and from Agency to the Commission, will be made in Agency-furnished containers; provided, however, that in the event the Commission determines that the required containers are not reasonably available from commercial sources, the Commission may furnish Commission-owned containers if such are available. Any Commission-owned containers to be used for shipment of material will be made available to Agency, f.o.b. Agency's vehicle or commercial conveyance, at a Commission facility designated by the Commission, unless otherwise agreed. Agency-furnished containers and equipment shall be delivered to a Commission facility designated by the Commission within a reasonable time specified by the Commission prior to the scheduled delivery of materials to be shipped to Agency in such containers and equipment. Agency-furnished containers or equipment will be used by the Commission only for the shipment of material from the Commission to Agency and for temporary storage of material shipped therein.
- b. All containers and equipment, whether Commission-owned or Agency-furnished, must meet Commission regulations, specifications, and practices as to safety, design criteria, cleanliness, and freedom from contamination in effect at the time furnished, utilized, or returned, of which the Commission shall be the sole judge. In the event material is returned by Agency to the Commission in non-Commission-owned containers and other material is to be delivered to Agency, the Commission shall utilize to the extent practicable such non-Commission-owned containers for shipments of material if so desired by Agency. The Commission will promptly return to Agency non-Commission-owned containers and other equipment identified as "Returnable," but will not be responsible for any loss of or damage to such containers or equipment except as may result from its fault or negligence. Such return shipments by the Commission will be made f.o.b. Agency's vehicle or commercial conveyance at the Commission facility to which they were shipped.

- c. Agency shall pay such rental charge, for such containers and equipment, as shall be established by the Commission for general application to users of such Commission-owned property. Agency will promptly return Commission-owned containers and equipment to the Commission facility from which received, f.o.b. Agency's vehicle or commercial conveyance at the Commission facility. Agency will not be responsible for any loss or damage to Commission-owned containers or equipment except as may result from the fault or negligence of Agency, its contractors, or agents. Commission-owned containers or equipment will be used only for shipment of material to and from the Commission and for temporary storage of material shipped therein.
- d. Whenever material or containers are shipped to the Commission or Commission-owned containers are returned to the Commission, and the Commission elects to decontaminate the containers, railroad cars, trucks, or other shipping vehicles or the Commission's unloading area and machinery, because the containers, or the material or the method of shipment failed to meet the health and safety standards prescribed by the Commission or any other Federal or State agencies having jurisdiction over such matters, Agency shall pay the Commission the full cost of such decontamination as determined by the Commission in accordance with established Commission pricing policy. Any residual quantities of material in containers or equipment returned to the Commission will be deemed to have been consumed by Agency, and Agency shall pay for such material in accordance with this Agreement.

#### ARTICLE 14 - DETERMINATION OF MATERIAL QUANTITIES AND PROPERTIES

- a. The Commission will furnish Agency a statement of the quantities and properties, including a statement of the weight of the material subject to this Agreement which is received by Agency directly from a Commission facility or returned directly to a Commission facility. The following provisions and procedures shall apply to the determination of the quantities and properties, including weight of the material:
  - 1. Commission samples obtained at a Commission facility using the Commission's procedures will be binding upon the Commission and Agency unless the Commission and Agency agree upon the use of other samples, procedures or sampling locations.

2. The weight of the material will be determined prior to delivery of Agency or acceptance of delivery by the Commission, as the case may be, at a Commission facility using the Commission's procedures and facilities. The weight of the material determined by the result of such procedures shall be binding upon the Commission and Agency, unless the Commission and Agency agree upon other procedures or facilities.
- b. Agency may, upon request to the Commission, observe the weighing of the material and the taking of samples by the Commission. The dates and places for the weighing and sampling will be established by the Commission and communicated to Agency upon receipt of Agency's request.

#### ARTICLE 15 - TRANSFER OF MATERIAL

Transfer of material by Agency to a lessee with the approval of the Commission as provided in this Agreement shall not have the effect of relieving Agency of any obligation hereunder, except as to return of or payment for material so transferred.

#### ARTICLE 16 - OTHER CONTRACTS AND AGREEMENTS

This Agreement contemplates the possibility of separate agreements between Agency and the Commission with respect to materials which are subject to this Agreement, which may provide for suspension, termination, or revision of matters hereunder; and for reimbursement of charges incurred pursuant to this Agreement. Except as provided in such agreements, Agency's obligations under this Agreement for material subject to this Agreement shall continue notwithstanding the existence of such separate agreement or agreements.

#### ARTICLE 17 - NOTICES

- a. Any notices required by this Agreement of Agency shall be submitted in writing to the Commission addressed to:

AEC Materials Leasing Officer  
Oak Ridge Operations Office  
United States Atomic Energy Commission  
Post Office Box E  
Oak Ridge, TN. 37830

ELSON  
-8611  
M-11

b. Any notices required by this Agreement of the Commission shall be submitted in writing to Agency addressed to:

Commandant, US Army Chemical Center and School

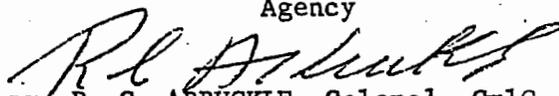
ATTN: Chief, Health Physics Division

Fort McClellan, AL 36201

IN WITNESS WHEREOF, the parties hereto have executed this Interagency Agreement the day and year first above written.

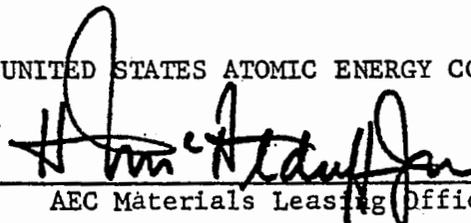
US Army Chemical Center and School

Agency

  
BY: R. C. ARBUCKLE, Colonel, CmC

TITLE: Assistant Commandant

THE UNITED STATES ATOMIC ENERGY COMMISSION

BY:   
AEC Materials Leasing Officer

H. J. MCALDUFF, JR.

Morgan, G.W. (**Appendix D-Licenses Listing**)

1958 Byproduct Material License No. 01-02861-01, 21 October 1957.  
U.S. Army Chemical School, Fort McClellan, Alabama.

BYPRODUCT MATERIAL LICENSE

This Copy is For Your Files

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter I, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

Licensee		<i>Amended in its entirety - see amendment # 2, 2 Dec 58</i>	
1. Name	Department of the Army U. S. Army Chemical Corps School	3. License number	1-2861-1
2. Address	Fort McClellan, Alabama	4. Expiration date	October 31, 1958
		5. Reference No.	

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
A. Polonium 210 (See page 2)	A. Gold Foil (See page 2)	A. 100 millicuries (See page 2)

9. Authorized use

A. RESEARCH AND DEVELOPMENT as defined in Section 11(q) of the Atomic Energy Act of 1954 and application dated April 10, 1957 and related correspondence.  
(See page 2)

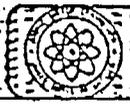
CONDITIONS

- Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
- Byproduct materials are to be used by, or under the supervision of, individuals designated by the radioisotopes committee; Colonel C. H. Wood, Chairman.
- Byproduct materials as sealed sources may be transported to and used at military installations as designated by the licensee and under the control of the radioisotope committee, U. S. Army Chemical Corps School, Fort McClellan, Alabama.
- Byproduct material shall not be used in:
  - or on human beings;
  - products distributed to the public.
- Leak testing of sealed sources containing beta and/or gamma-emitting byproduct material (except those containing Iridium 192, Tantalum 182, and Gold 198 in discrete metallic form) shall be carried out at intervals of six months and records of the leak test results shall be furnished the Atomic Energy Commission upon request.  
(See page 3)

For the U. S. Atomic Energy Commission



Date October 21, 1957

by  Director, Isotopes Extension  
Division of Civilian Application  
Oak Ridge, Tennessee

Encl 1-1

BYPRODUCT MATERIAL LICENSE

Supplementary Sheet

License Number 1-2861-1

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radio- activity which licensee may possess at any one time
B. Any byproduct material between Atomic Nos. 3 and 83, inclusive	B. Any	B. 100 millicuries of each byproduct material between Atomic Nos. 3 and 83, inclusive, with the following exceptions:
Strontium 90	Sealed Sources	No source to exceed 5 millicuries: Total 100 millicuries
Cesium 137	Sealed Sources	20,000 millicuries
Cobalt 60	Any	6,000,000 millicuries
Antimony 122	Any	500 millicuries
Bromine 82	Any	300 millicuries
Chromium 51	Any	200 millicuries
Copper 64	Any	500 millicuries
Gold 198	Any	3,000 millicuries
Iodine 131	Any	300 millicuries
Iridium 194	Any	300 millicuries
Mercury 197	Any	4,500 millicuries
Mercury 203	Any	600 millicuries
Osmium 191	Any	300 millicuries
Palladium 109	Any	3,000 millicuries
Phosphorous 32	Any	1,000 millicuries
Potassium 42	Any	400 millicuries
Rhenium 186	Any	250 millicuries
Rubidium 86	Any	350 millicuries
Selenium 75	Any	300 millicuries
Gross Fission Products	Any	50 millicuries

9. Authorized use

B. RESEARCH AND DEVELOPMENT as defined in Section 11(q) of the Atomic Energy Act of 1954 and application dated April 10, 1957 and related correspondence.

For the U. S. Atomic Energy Commission

Date October 21, 1957

by    
 Director, Isotopes Extension  
 Division of Civilian Application  
 Oak Ridge, Tennessee

Enc! 1-2

## BYPRODUCT MATERIAL LICENSE

Supplementary Sheet

License Number 1-2861-1

## CONDITIONS (continued)

15. Leak testing of sealed sources containing alpha-emitting byproduct material shall be carried out at intervals of three months and records of leak test results shall be furnished the Atomic Energy Commission upon request.
16. Written administrative instructions covering appropriate radiological protection phases of operational procedures and establishing responsibility for radiological protection, control, and security of the byproduct material shall be supplied individuals using or having responsibility for use of such material.
17. A curie of Ir-192 is defined as that quantity of activity which presents a radiation intensity of 0.55 roentgens per hour at a meter.
18. Each sealed source container (capsule) of licensed material to be used outside of a shielded exposure device or within a restricted field shall be labelled or have permanently attached to it a durable, legible, and visible tag. The label or tag shall be attached directly to the container (capsule), or by the use of a durable chain or leader. The label or tag shall be at least one square inch in area and shall bear a radiation caution symbol in conventional colors, magenta or purple on a yellow background, and a minimum of the following instructions: "Danger - Radioactive Material - Do Not Handle - Notify Military Authorities if Found."
19. Notwithstanding Section 20.203(c)(2), Pelham Range Area need not be equipped with a control device referred to in this section.
20. Statements and representations contained in the following documents submitted by the licensee are incorporated by reference as conditions of this license:
- Application (Forms AEC-313 and 313b) and enclosures thereto dated January 29, 1957 signed by Colonel C. H. Wood, Chairman, Isotopes Committee.
  - Memorandum No. 5, and Operational Directives No. 1 through No. 9, dated October 9, 1957 concerning radiological safety procedures.
  - Pelham Range radiation area shall be secured by a fence as described in specifications furnished the AEC Representatives on October 5, 1957. Such a fence shall be six feet high (four feet hog wire topped by at least three strands of barbed wire). Further control of access to this range shall be provided by patrol road adjacent to fence. Entrance to area shall be through two gates, both of which are secured against unauthorized entry by padlock or military guard.

— End of License —

For the U. S. Atomic Energy Commission


 by  J. W. Morgan
Date October 21, 1957
 Director, Isotopes Extension  
 Division of Civilian Application  
 Oak Ridge, Tennessee

Powell, William G., Second Lieutenant, CmlC  
1955 Letter to Isotope Committee, Pelham Range Radiological Survey Area,  
4 February 1955. Health Physics Group, The Chemical Corps School, Chemical  
Corps Training Command, Fort McClellan, Alabama.

~~TOP SECRET~~  
HEALTH PHYSICS GROUP  
THE CHEMICAL CORPS SCHOOL  
CHEMICAL CORPS TRAINING COMMAND  
FORT McLELLAN, ALABAMA

4 February 1955

SUBJECT: Pelham Range Radiological Survey Area

TO: Isotope Committee  
The Chemical Corps School  
Fort McClellan, Alabama

1. Project: To construct a larger and more realistic radiological survey training area at Pelham Range. ←

2. Work Completed:

a. Approximately 60 source wells have been completed by Training Aids Branch.

b. A shipment of 500 curies of Cobalt-60 was received on 24 December 1954. The cobalt was sealed in 5 shipping capsules.

c. On 3 January 1955 one of the five shipping capsules was emptied, and the contents were encapsulated in 30 source capsules of 2 - 4 curies each. The First Radiological Safety Support Unit supported this operation. Two of the remaining four shipping capsules were placed in the storage well of the radioactive materials vault. The other two shipping capsules were buried in six foot pipes at the School burial ground. ←

3. Work Pending:

a. Approximately 130 source wells are awaiting hinges and hasps in order to be completed by Training Aids Branch.

b. Four shipping capsules of the cobalt remain to be emptied. The source capsules required are either on hand or are being constructed by Training Aids Branch.

c. 105 holes to accommodate the source wells are to be drilled by Post Signal as soon as their mechanical auger is repaired.

~~TOP SECRET~~

*6-11*

~~FOR OFFICIAL USE ONLY~~

Subject: Pelham Range Radiological Survey Area

d. Engineer support for towing 10 tanks to the new area is still pending. A follow-up has been made. ←

e. A fence to enclose the new area is being requisitioned. ←

*William G. Powell*

William G. Powell  
2d Lt, GmlC

~~FOR OFFICIAL USE ONLY~~

Rosell, Fred E. Jr., Major and Egan, Daniel J., Specialist 4  
1961 Article, The U.S. Army Chemical Corps Radiological Unit, U.S. Army Chemical  
Corps Training Command. *Armed Forces Chemical Journal*, January-February  
1960. Edgewood, Maryland.

12 FEB 1960

147

EDGWOOD

# *ARMED FORCES* **CHEMICAL** *JOURNAL*



JANUARY-FEBRUARY 1960

# THE U. S. ARMY CHEMICAL CORPS RADIOLOGICAL UNIT

An Army Approach to the Problem of Protection Against Radiation



Soldiers of Ft. McClellan Unit, wearing protective clothing and masks, operate radiac instruments in training exercise to determine the amount of radioactivity, if any, contained in their clothing and equipment following exposure.

By MAJOR FRED E. ROSELL, JR., AND SP4 DANIEL J. EGAN  
*U.S. Army Chemical Corps Training Command*

**D**URING the field testing of nuclear devices, the protection of personnel against radioactivity is a major undertaking. To cope with the many safety requirements imposed by this activity and to provide systematic protection for personnel and equipment against radioactive contamination during field testing, the U.S. Army Chemical Corps organized in 1953 the U.S. Army First Radiological Safety Support Unit. This unit, which was recently redesignated the U.S. Army Chemical Corps Radiological Unit, is the only one of its type in the Armed Services.

The Rad Unit, as the unit is commonly called, is an organizational element of the U.S. Army Chemical Corps Training Command located at Fort McClellan, Alabama. While the unit is generally designed to provide radiological safety support for Joint Task Forces and the Defense Atomic Support Agency (formerly Armed Forces Special Weapons Project) at nuclear sites in the United States and the mid-Pacific area, it also assists in the radiological tests and other activities which aid in the development of training and tactical doctrine.

Staffed with twelve officers and seventy-five enlisted men, the Rad Unit is organized into a Unit Headquarter

and three platoons—service, dosimetry, and operations (see Chart I). The Operations Platoon is further organized into three sections—monitoring, decontamination, and rad-chem laboratory; the Service Platoon is organized into two sections—instrument repair and supply. Because of its single function, the Dosimetry Platoon is not further subdivided. The Dosimetry Platoon and each of the sections of the other two platoons represent important functions in providing radiological

Major Rosell was commissioned in the Corps of Engineers in 1942, and served in that branch until 1956 when he was detailed in the Chemical Corps, transferring to that service in 1958. Before his present assignment as Nuclear Advisor, USA Chemical Corps Training Command, he had served with the USA Chemical Corps Field Requirements Agency, and as a Commanding Officer of the USA First Radiological Safety Support Unit, participating in radiological safety activities during the nuclear tests of Operations PLUMBBOB and HARDTACK. He is a graduate of the U.S. Military Academy, the Engineer School, the Airborne School, the Chemical Corps School, and the Command and General Staff College. He received an MS degree in civil engineering at California Institute of Technology and an MS degree in physics at the U.S. Naval Postgraduate School.

Sp4 Daniel J. Egan entered the Army in April 1957. A native of Pennsylvania, he attended the University of Detroit, majoring in Civil Engineering, prior to his entry on active service. During his tour of duty as a member of the U.S. Army First Radiological Safety Support Unit, he participated in radiological safety activities during the nuclear tests of Operations PLUMBBOB and HARDTACK.

*(Continued on Page 10)*

safety services to personnel engaged in nuclear weapons testing or other radiological activities.

Basic to any radiological safety system are the radiological detection instruments. At present, two principal types of these instruments are assigned to the Rad Unit; they are the AN/PDR 27, with probe, and the AN/PDR-39. The "27" meter will detect and compute gamma radiation, and will detect, but not compute, beta emissions. It is used primarily to monitor personnel. The "39" meter will detect, identify, and compute only gamma radiation and is especially designed for surveys of large surfaces, such as land areas, with readings being taken by monitors on foot or in surface transportation.

**O**THER items essential to the operation of the Rad Unit are the personnel film badges, used to record individual radiation exposure, and film densitometers used in reading the exposed film badges to determine the specific number of roentgens to which the film and its wearer have been exposed. The latest model densitometers employ computing machines with memory units that record and store data secured from the film badges. The computing units have the capability of providing cumulative exposure data on personnel and units engaged in test operations.

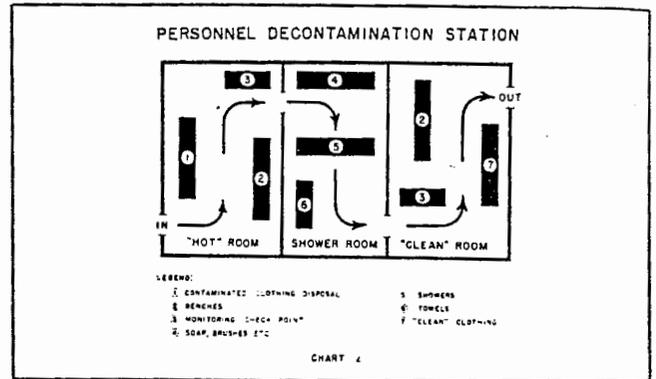
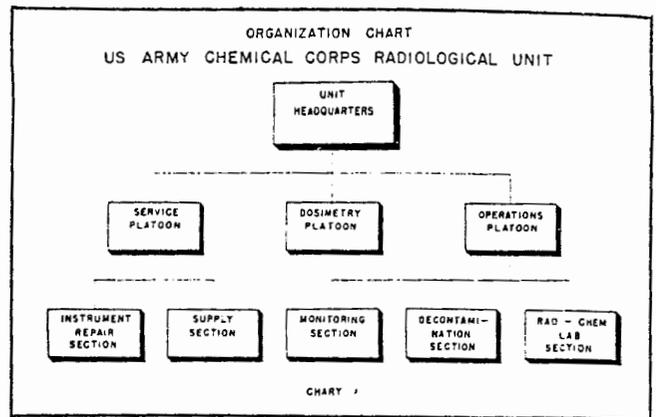
In conducting its operations at a test site, the Rad Unit establishes a standard radiological safety control and processing system applicable to all personnel working in areas subjected to induced radioactivity or appreciable fallout from a nuclear explosion. The system contains five elements: orientation of personnel, issuance of anti-contamination clothing and detection equipment, control of personnel entering and leaving a contaminated area, decontamination, and radiation exposure control.

As a first step in this process, all personnel engaged in test work receive a safety orientation conducted by briefing officers of the Monitoring Section. At this orientation, the prevailing radiological situation, as established by aerial and ground surveys, is presented along with data covering the safety restrictions under which personnel must work. Following the orientation, personnel are issued required anti-contamination clothing, respirators, survey instruments, and film badges.

To control the movement of personnel and equipment in a contaminated area, radiation monitors from the Monitoring Platoon maintain check points at points of entry and departure. All personnel are logged in and out of the area, and departing personnel are instructed to report to a personnel decontamination station. At the time of departure, film badges are collected from personnel and sent to the Dosimetry Platoon for development and analysis.

At the decontamination station (see Chart 2) personnel are required to remove anti-contamination clothing, and place it in containers located in the "hot" room. Personnel are then monitored to determine the extent of contamination, if any, and then shower to remove any radioactive residue. Showering is repeated as necessary until the individual is determined by monitoring to be free from contamination. Personnel are then issued clean clothing and released. In a similar procedure, equipment used in a contaminated area is processed through an equipment decontamination station and returned to normal use if possible.

**T**HE Dosimetry Platoon, staffed with specialists in photographic laboratory procedures and film densitometer operations, are put to work developing the film packets. The film used is of the dental X-ray type,



and will record exposures to gamma radiation ranging from 0 to 600 or 1000 roentgens, depending on the actual type used. By using a densitometer with an automatic computer, several thousand film badges may be processed in a few hours and the results made available for timely exposure control of personnel.

Keeping the radiac survey instruments at an acceptable level of operation is the primary mission of the Instrument Repair section. In accomplishing its mission, this section establishes facilities for testing, repairing, and calibrating these instruments. The Supply Section maintains stocks of anti-contamination clothing, respirators, towels, and all other types of items required by the Rad Unit; in addition, it may operate facilities for laundering contaminated clothing.

The smallest section of the Rad Unit is the Rad-Chem Lab, which is primarily concerned with radioactive analysis of earth and water samples. It is staffed by four U.S. Navy personnel attached to the unit during test operations.

Although the work accomplished by the Rad Unit is demanding, the various nuclear test sites are organized to provide maximum recreation facilities for test personnel. The Pacific test sites—especially Eniwetok and Bikini Atolls—located in the Marshall Islands approximately 2500 miles southwest of Hawaii, have facilities for fishing, skin diving, skeet shooting, swimming, shell hunting, and many other activities, thus bridging the gap between work and recreation.

Though the Rad Unit performs its mission of radiological safety under relatively controlled conditions, the lessons learned by such operations have provided the U.S. Chemical Corps with many answers to the problem of radiological protection on the nuclear battlefield. The experience gained by the Rad Unit is continually subjected to testing and analysis by the U.S. Army Chemical Corps Training Command in its program to provide the combat arms and other services with the latest instruction and doctrine on radiological warfare, radiological defense, and radiological safety.

Schwertner, Larry J., Captain, CmlC

1972 Letter, Renewal of Atomic Energy Commission Byproduct Material  
Licenses No. 01-02861-01 and 01-02861-02. U.S. Army Chemical School,  
Fort McClellan, Alabama.



DEPARTMENT OF THE ARMY  
U S ARMY CHEMICAL CENTER AND SCHOOL  
FORT MC CLELLAN, ALABAMA 36201

LOG

ATSCM-H

29 FEB 1972

SUBJECT: Renewal of Atomic Energy Commission Byproduct Material  
Licenses No. 01-02861-01 and 01-02861-02

THRU: ~~Commanding Officer, US Army School/Training Center, 177024~~  
~~Fort McClellan, Alabama 36201~~  
~~Commanding General, Third US Army, ATTN: AJAGL-D-S-S, Woy~~  
~~Fort McPherson, Georgia 30330~~ 6W  
Commanding General, US Continental Army Command,  
ATTN: ATLOG-S/GS, Fort Monroe, Virginia 23351

TO: HQDA (DALO-MAE) WASH DC 20310

1. References:

- a. Title 10, Code of Federal Regulations, Part 30.
- b. AR 700-52, Licensing and Control of Sources of Ionizing Radiation.
- c. AEC Byproduct Material License 01-02861-01, with Amendments 1 through 17.
- d. AEC Byproduct Material License 01-02861-02, with Amendments 1 through 4.

2. Request that the licenses in references 1c and 1d be renewed for a three-year period.

3. AEC-313 Forms are attached as Inclosure 1 and 2 showing applicable information pertaining to these licenses. The same safety program and facilities that are presently being utilized under our current license will remain in effect, thus no copies of the Radiation Safety Program are included with this application.

ATSCM-H

SUBJECT: Renewal of Atomic Energy Commission Byproduct Material  
Licenses No. 01-02861-01 and 01-02861-02

4. Inclosures 3 and 4 contain updated information as requested in  
Blocks 8, 9 and 10 of AEC Form 313.

FOR THE COMMANDANT:

4 Incl  
as

*Robert H. Dadd*  
*CPT CmlC*  
LARRY J. SCHWERTNER  
CPT, CmlC  
Assistant Secretary

U.S. Army Chemical Center and School

1965 Dedication Ceremony, Rideout Field Radiological Training Area, 2 June 1965.  
Fisher Library, Fort McClellan, Alabama.

U. S. ARMY CHEMICAL CENTER AND SCHOOL  
FORT McCLELLAN, ALABAMA



DEDICATION CEREMONY

RIDEOUT FIELD RADIOLOGICAL TRAINING AREA

1330 HOURS

2 JUNE 1965

COUGHLAN AUDITORIUM

AND

RIDEOUT FIELD

## DEDICATION OF RIDEOUT FIELD

Radiological Survey Training Area No. 3, Fort McClellan, Ala., is designated Rideout Field, effective 2 June 1965, in honor of First Lieutenant Percy A. Rideout, Chemical Warfare Service, Distinguished Service Cross, for extraordinary heroism in action at Aerges, France, 5 October 1918. He made an extended reconnaissance in advance of the outposts, fearlessly exposing himself to the enemy and machine gun fire. The information he secured was valuable to the infantry for it gave them knowledge of exact location of machine gun nests. During the action, Lieutenant Rideout directed the laying of the smoke barrage from an exposed position, remained at his station throughout the operation in spite of severe shell and machine gun fire, and continued to display the highest courage until he was killed by shell fire.

Dedication is performed by Miss Gertrude H. Rideout (sister) and Mrs. Helen M. Dodge (widow), 2 June 1965.

U.S. Army Chemical Center and School

1972 Quarterly Historical Report (first page), regarding closing date of Rideout Field as a Training Area, 1 January-31 March 1972. U.S. Army Chemical School, Fort McClellan, Alabama.

QUARTERLY HISTORICAL REPORT

U. S. ARMY CHEMICAL CENTER AND SCHOOL  
FORT MCCLELLAN, ALABAMA

Period of Report: 1 Jan - 31 Mar 1972

I. ADMINISTRATION.

A. Changes in Organization, Mission, Responsibility, Operations and Administrative Procedures.

During February, HHC, School Battalion assumed the responsibility of Student Enlisted Company's mess hall and the responsibility for providing mess for all three companies in School Battalion.

B. Acquisition or Disposal of Physical Facilities:

1. Rideout Field was closed as a Training Area effective 1 Mar 72. Removal of the Cobalt 60 sources was started on 1 Mar 72 and completed on 21 Mar 72. The old Radioactive Material Burial Ground was cleared and the High Radiation Area signs were removed from the perimeter fence on 28 Mar 72. Two hundred (200) Cobalt 60 sources were shipped out for disposal on 17 Mar 72, Disposition Instructions for the remaining 820 Cobalt 60 sources were requested on 29 Feb 72.
2. Computer Data Terminal<sup>unit</sup> installed to tie in with General Services Administration Computer Time-Sharing Service, 30 March 1972.
3. The Office of Logistics terminated buildings 1898 and T1998, 12 Jan 72; building 3209, 7 Feb 72; buildings 3206, 3242, 3279 and 3292, 15 Mar 72; buildings 3236, 3237 and 3238, 27 Mar 72.
4. Military Art Department lost office space - room 28, required reallocation and consolidation of space in General Subjects Division.
5. The training facility, Rideout Field, has been phased out, and the equipment has been or will be returned to Center.

U.S. Environmental Health Laboratories

1957 Progress Report on Summary of Action on Recommendation, Report of Radiation Protection Survey Number 2672R75057, 27-28 May 1957. Army Chemical Center, Maryland.

**PROGRESS REPORT ON SUMMARY OF ACTION ON RECOMMENDATION  
MADE IN REPORT OF RADIATION PROTECTION SURVEY NR 2672K75057,  
27-28 MAY 1957, BY INSPECTIVE TEAM, US ARMY ENVIRONMENTAL  
HEALTH LABORATORIES, ARMY CHEMICAL CENTER, MARYLAND**

**Para 5a, b6:** Arrangements are being made to acquire tags from commercial sources. Metal tags with the necessary information are to be attached to the radioactive sources with a metal fastener. Identifying, labeling and inventory of the sources are to be accomplished at the same time. This procedure will prevent rehandling of the radioactive material for each task, thus reducing the dosage received by personnel performing the operations.

Inventory is maintained as to location and quantity. As soon as the above tags are received this inventory will list individual sources by tag number.

An inventory of Palham Range field sources has been accomplished according to the requirements set up by Mr. Hitch, ABC, during the conference held with him on 7 August 1957.

**Para 5d:** Accomplished. See reference 1a, 3d Ind.

**Para 5e:** Use of present "hot cell" has been discontinued.

**Para 5f:** Accomplished. See reference 1a, 3d Ind.

**Para 5g:** Accomplished. See reference 1a, 3d Ind.

**Para 5h:** A request for a 6 foot fence consisting of a 4 foot hog wire fence, topped by 3 strands of barbed wire, has been submitted to Third Army for budgeting. Fence will be erected by post personnel when funds are made available.

**Para 5i:** According to the requirements set up by Mr. Hitch, ABC, on 7 August for leakage tests, 20 randomly selected Palham Range field sources have been tested for leakage. No leakage was found.

**Para 5k:** See reference 1a, 3d Ind.

**Para 5l:** The old burial ground presently is fenced with 3 strands of barbed wire and adequately posted. On 25 September 1957 work will be started on the construction of a 6 foot fence consisting of 4 foot hog wire, topped by 3 strands of barbed wire, around the old burial ground. The necessary supplies are on hand for this job. ←

**Para 5n:** See reference 1a, 3d Ind.

**Para 5o:** Use of the new burial ground has been discontinued. Future waste will be disposed of in accordance with the provisions of AR 755-380. ←

**PROGRESS RPT ON RADIATION PROTECTION SURVEY NR 2672R75-57 (Cont'd) :**

**Para 52:** Arrangements have been made with Lexington Signal Depot for conducting accuracy tests. A test as outlined in reference 1a, 3d Ind is currently being conducted and will be completed on 30 September 1957.

The US Army Chemical Corps School SOP for handling radioactive material is completed in draft form. The SOP has been staffed through AEC By-Product Licensing Isotope Extension Division of Civilian Applications. All suggestions and recommendations made by them have been incorporated in the present Standing Operating Procedures.

**U.S. Army Toxic and Hazardous Materials Agency.**

1977 Installation Assessment of Fort McClellan. April 1977. Defense Technical Information Center, Fort Belvoir, Virginia.

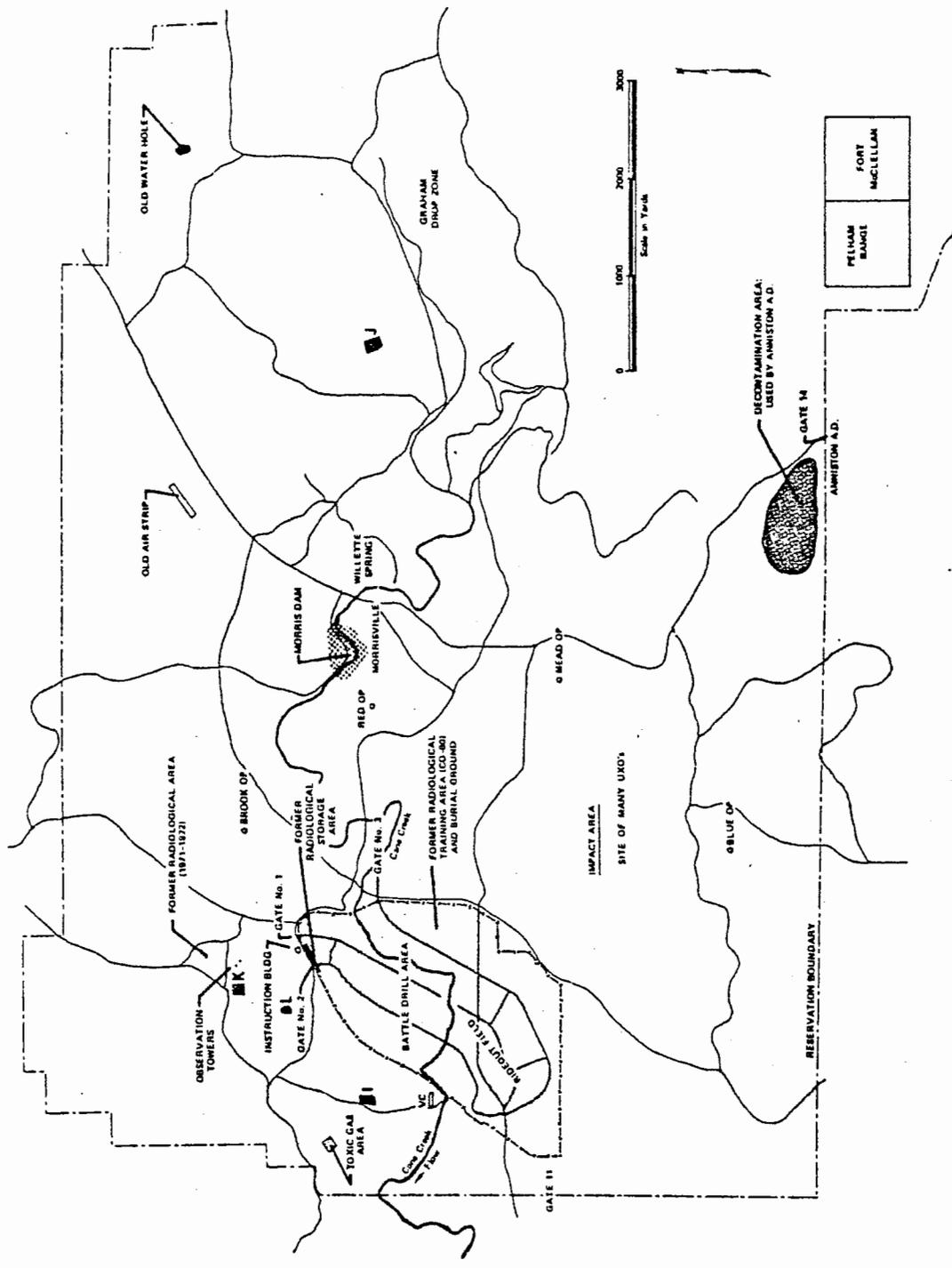


Figure II-12. Approximate Areas of Contamination: Pelham Range

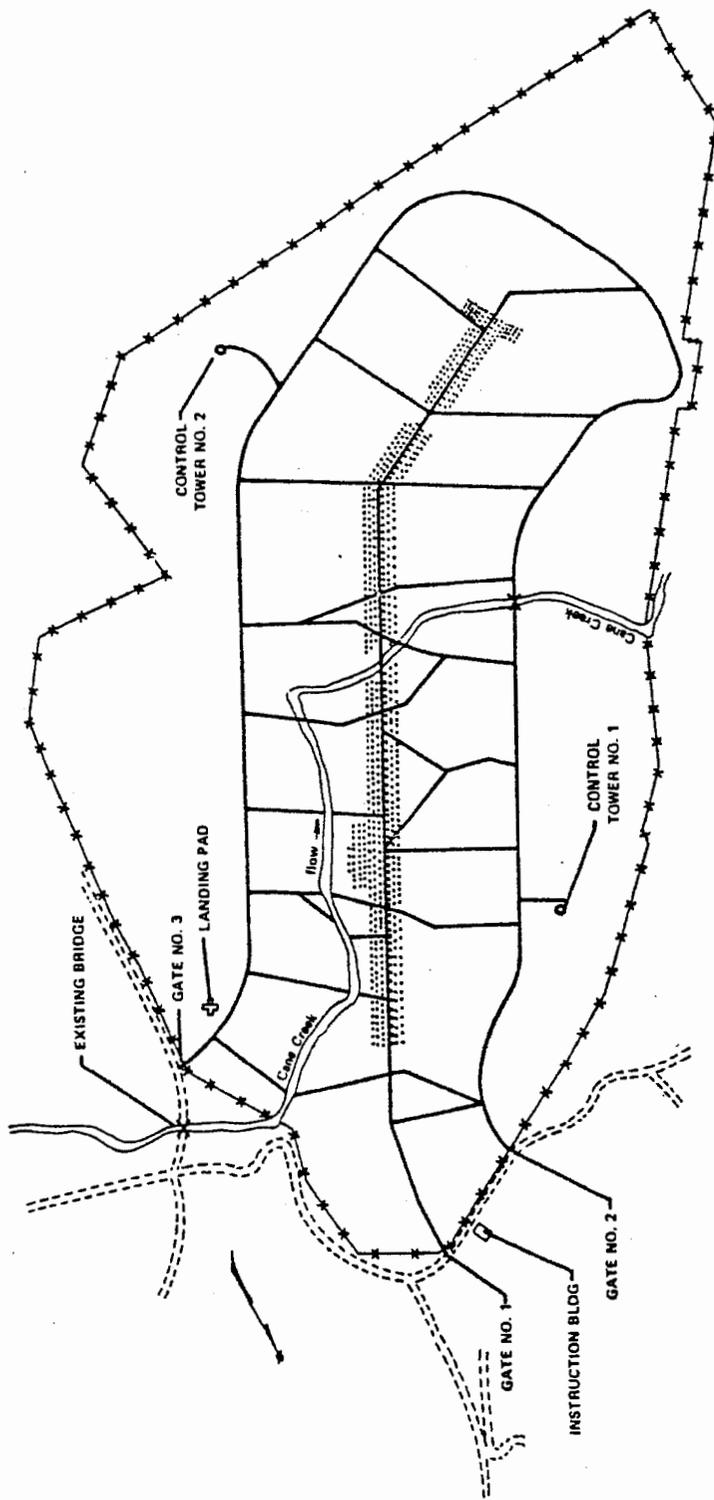
simulants is not considered a contributing factor. Figure II-12 maps the approximate locations of these ranges; areas are not drawn to scale. More exact locations for the three sites I, J, and K may be found in Appendix H. Site L location data was not included in the reference. Figures II-13 and II-14 are 1973 photographs of Sites I and J, respectively; similar photographs were not available for Sites K and L.

Other areas on Pelham Range thought to be contaminated include a Toxic Gas Area northwest of Site I; Figure II-15 is a 1977 photograph taken in this area. The Team was unable to find an "Old Water Hole," said to be located in the vicinity of the northeast corner of Pelham, and thought to be a disposal site for just about everything, including live conventional and chemical ammunition, etc. A decontamination area on Pelham Range near Gate No. 14 is currently used by adjoining Anniston Army Depot. An old demilitarized mustard (H) round and decontamination material was found in the former Radiological Area north of Pelham K. The Pelham Impact Area contains numerous rounds of unexploded ordnance (UXO). An indication of current activity that could add to the number of UXO on other ranges is provided by Table II-7 which lists explosives and rounds of ammunition fired during the month 20 August through 18 September 1976.

b. Radiological Contamination on Pelham Range. Rideout Field was the former Chemical School's Radiological Survey Training Facility and burial site on Pelham Range (see Figure II-12). This facility consisted of Rideout Field; Rideout Hall, which housed an operating console for the Field; a classroom; and a helicopter landing pad (see Figure II-16). This facility was used from 2 June 1965 until 1 March 1972 to train students in the techniques of conducting ground and aerial radiological surveys. At one time, one thousand high-intensity radioactive cobalt-60 sources were mounted in the center of an inclosed area two miles long and one mile wide. The radiation emitted by the sources could be used to simulate the fallout pattern that might be produced by the detonation of a 0.5 kiloton nuclear weapon.\* Upon closeout of the Chemical School, all of the radioactive sources containing Co-60 were removed from the facility. A backhoe was used to dig up buried wastes, and Rideout Field was subsequently certified clean by the AEC. However, in view of the random manner used to bury radioactive wastes, it is felt that there is a possibility that all of this material was not recovered.

#### B. Installation Land Use Factors

\*Fact Sheet, US Army Chemical School's Rideout Field Radiological Survey Training Facility (inclosure to DF, Health Physics Division, Fort McClellan, ATSCM-H, subject: Disposal of Rideout Field, dated 18 March 1972).



II-31

Figure II-16. Rideout Facility

**Wood, C.H., Colonel, CmlC.**

1955 Letter to Chemical Corps Training Command, Fort McClellan, Final Disposition of Radioactive Tantalum and Container, 23 November 1955. Record Group 175, Box 7, Entry: Chemical Corps School. National Archives II, College Park, Maryland.

CMTC-S-8 400.2

23 NOV 1955

SUBJECT: Final Disposition of Radioactive Tantalum and Container

TO: Commanding Officer  
Chemical Corps Training Command  
Fort McClellan, Alabama  
ATTN: Director of Logistics

1. References: Ltr CMTC-S-8, Subject: Disposition of Radioactive Tantalum and Container, To: CO, CMLCTRGCOM, dtd 29 Dec 54.

2. The First Radiological Safety Support Unit, supervised by the Health Physics Group, disposed of the radioactive tantalum on 18 October 1955. The material was buried in sealed cans in The Chemical Corps School Radioactive Materials Burial Ground.

3. The tantalum container has been salvaged for use by the Radiological Branch, The Chemical Corps School.

4. All prescribed radiological safety measures have been observed.

*C. H. Wood*

C. H. WOOD  
Col, CMLC  
Chairman, Isotope Committee  
APPROVED:  
Chief, Health Physics Group *CSB*  
Chairman, Isotope Committee *CMW*

MEMO FOR RECORD:

Letter from CMLCTRGCOM, dtd 10 Jan 55, authorizes disposition of tantalum and container by The Chemical Corps School, and requests notification of final disposition.

P701

400.2

FILE. NOV 30 1955