

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 030-13027/89-02

Docket Nos. 030-13027

License No. 12-00722-06 Priority 7 Category K Program Code _____

Licensee: Department of the Army

Facility Name: Letterkenny Army Depot

Inspection At: Chambersburg, Pennsylvania

Inspection Conducted: October 31 - November 1, 1989

Inspectors: David J. Collins
David J. Collins, Health Physicist

December 21, 1989
date

Anthony J. Kirkwood
Anthony Kirkwood, Health Physicist

December 21, 1989
date

Approved by: John R. White
John R. White, Chief
for Nuclear Materials Safety Section C

12-21-89
date

Inspection Summary: Special, Announced Safety Inspection Conducted
October 31 - November 1, 1989 (Inspection Report No. 030-13027/89-02)

Areas Inspected: Announced, closeout safety inspection limited to survey of facility for residual contamination prior to release of facility for unrestricted use. Sixty wipes were taken and assayed for removable tritium (H-3) contamination.

Results: No violations were identified. No removable tritium contamination was found above 124 disintegrations per minute per 100 cm². The licensee's survey enclosed with their letter dated October 27, 1989 accurately reflects the condition of the facility.

9002280240 900102
REG1 LIC30
12-00722-06 PDC

DETAILS

1. Person Contacted

Letterkenny Army Depot

- *Colonel Stephen Etzel, Commanding
- *Kenneth Davis, Project Manager
- *Robert Hamsher, Radiation Protection Officer

Army Materials Command Depot Systems Command

- *Daniel H. Kuhn

Other personnel were also contacted

*denotes those present at the exit interview

2. Background

Building 5250 is the Industrial Radiography/Non-Destructive Testing Facility at Letterkenny Army Depot, Chambersburg, Pennsylvania. The facility is a single story building constructed partially of poured concrete and concrete block. The installation does not use radioactive materials for radiography. Letterkenny Army Depot is authorized to possess and use tritium in sealed irradiation devices.

On April 4, 1988 a leaking tritium irradiation device was brought to the facility to be examined. During the decontamination process, the device was removed from its protective wrapping. An estimated 333 millicuries of the total 3 curie contents were released into the confines of the building.

The licensee has performed extensive survey and decontamination work in the facility. Personnel working in the cleanup have been monitored by the installation's tritium bioassay program and records have been maintained. Tritium contaminated wastes have been packaged and surveyed properly. A waste shipment to a burial site was made on May 23-24, 1989.

3. Survey For Removable Contamination

Sixty wipe samples were taken at representative locations throughout the facility by the inspectors. The smears were analyzed in the NRC Region I Laboratory on a Packard Tri-Carb Model 2250CA Liquid Scintillation Analyzer. The maximum quantity found on any wipe was 124 dpm/100 cm².

No violations were identified.

4. Exit Interview

The results of the survey were discussed with the individuals indicated in Section 1 of this report. Other persons attended the exit interview.



DEPARTMENT OF THE ARMY
LETTERKENNY ARMY DEPOT
CHAMBERSBURG, PENNSYLVANIA 17201

REPLY TO
ATTENTION OF:

October 27, 1989

Safety Office

Mr. John White
U. S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406

Dear Mr. White:

This letter is to inform you of the completion of Phase III of the Letterkenny Army Depot (LEAD) Plan for Decontamination of Building 5250 - Radiographic Facility on October 27, 1989. This completes the Radiological survey performed to assess the effectiveness of the decontamination efforts of Phase II.

The following information is provided to inform you of changes made between Phase II and Phase III. Training on procedures and guidelines governing the numbering, mapping and documentation of Phase III were conducted with project personnel. Movement within the building was stressed, in the event contamination was still present, to prevent possible migration. The team was instructed to change plastic booties whenever a room was exited, and the last set of booties of one assessment worker would be wipe tested at the end of each work day.

Plastic runners were laid down in all areas where traffic was necessary on a daily basis, to get from one room to another in order to make the assessment. Plastic was removed as necessary to assess that area and back our way out of the building.

No protective coveralls (disposable coveralls) were required during Phase III. Nondisposable clothing provided continued to be worn along with booties and gloves when entering Building 5250. Neatly trimmed beards were allowed by personnel if desired. Showering was still required as prescribed in CS SOP 385-022. Laundering of issued clothing was continued as necessary.

The Radiological Survey, performed to assess the effectiveness of the decontamination effort of Phase II, began on September 5, 1989. The building was assessed in the same sequence as the decontamination took place in Phase II. Sample numbering was cross referenced with Phase I, and shown on the survey forms for quick comparison. Floor surfaces were wipe tested entirely, whereas wall surfaces, from the floor up two (2) meters were assessed. Five wipes per meter were taken, sampling the entire meter area.

Contamination remaining above 800 dpm's, was decontaminated with nonionic detergent and distilled water and rewipe tested to determine the effectiveness of the redeconning effort. The findings of all assessments found to be above 800 dpm's and their results after redeconning are attached as Enclosure 1 of this report. There were 37 areas above the 800 dpm's level with all but two being found in the transfer area complex. This procedure was in keeping with our policy of "As Low as Reasonably Achievable" (ALARA).

Air monitoring with a script chart in the Documentation Room continued, and air sampling was done inside Building 5250 in the rooms that personnel were working. Daily environmental sampling of air was reduced from four stations to one, rotating locations. Water, laundry and wipe tests of project facilities and equipment continued throughout Phase III. Bioassays continued for all project personnel. None of the above testing resulted in higher than acceptable concentrations, as per the Decontamination Plan.

Special tests were conducted to measure the effect that air conditioning had on airborne concentration levels. The electrical and 320KV rooms were chosen for these tests due to the independence of these systems. With the air conditioning turned off, 40ML cups of water were left to stand for 24 hours in each room. Samples were tested for tritium and calculated. Air conditioners were turned on and the same tests were run with samples being compared. Tritium concentration levels were nearly the same for both tests, indicating that airborne levels were virtually unaffected by the air conditioning systems. Surface contamination was also reassessed with the findings being similar to the airborne testing results.

Following Phase III completion and the final inspection, the project will continue with the Post Decontamination Monitoring Plan for Building 5250 dated August 30, 1989.

A fresh air makeup ventilation system will be installed in Building 5250 to insure the prevention of a buildup of tritium and radon gas, if present.

All concrete and block wall surfaces will be painted with an epoxy paint that will serve as a sealer, as a minimum, from the floor surface up two full meters high on the walls.

The building will be surveyed on a regular basis. All full time employees will be kept on the LEAD Bioassay Program and will be tested monthly. Building 5250 will be placed on the LEAD Radiation Protection Officer's routine survey. This will be completed on a weekly basis and will include random wipes of hot spots encountered during the Phase I assessment, until statistical data indicates this can be reduced to a monthly assessment.

Sincerely,



KENNETH G. DAVIS
Project Manager

Copies Furnished:

Commander, U.S. Army Armament, Munitions and Chemical Command,
ATTN: AMSMC-SFS, Rock Island, Illinois 61299-6000

Commander, U.S. Army Materiel Command, ATTN: AMCSF-P/AMCSG-R,
5001 Eisenhower Avenue, Alexandria, Virginia 22333-0001

Commander, U.S. Army Depot System Command, ATTN: AMSDS-SF,
Chambersburg, Pennsylvania 17201-4170

PHASE III ASSESSMENT (over 800 DPM'S)

PHASE III ASSESSMENT				RE-ASSESSMENT AFTER DECON	
ROOM/LOCATION	DATE	VIAL #	DPM's	DATE	DPM's
Trk Well/Floor	26Sep89	293	1534	28Sep89	34
Transfer/East Wall	27Sep89	118	10024	28Sep89	161
Transfer/Pit	28Sep89	557	4511	29Sep89	8
Transfer/Pit	28Sep89	595	1151	29Sep89	1223
				02Oct89	0
Transfer/Pit	28Sep89	609	45412	29Sep89	55191
				02Oct89	17
Transfer/Pit	28Sep89	706	825	29Sep89	53
Transfer/Floor	02Oct89	729	1386	03Oct89	1454
				04Oct89	23
Transfer/Floor	02Oct89	736	26015	03Oct89	22629
				04Oct89	625
Transfer/Floor	02Oct89	738	1422	03Oct89	1421
				04Oct89	20
Transfer/Floor	02Oct89	740	816	03Oct89	140
Transfer/Floor	02Oct89	827	11955	03Oct89	103
Transfer/Floor	02Oct89	887	1028	03Oct89	660
				04Oct89	0
Transfer/Floor	03Oct89	1041	853	04Oct89	402
Transfer/Floor	03Oct89	1177	1889	04Oct89	20
Transfer/Floor	03Oct89	1312	1747	05Oct89	18
Transfer/Floor	03Oct89	1319	1239	05Oct89	4
Transfer/Floor	03Oct89	1321	1023	05Oct89	13
Transfer/Floor	03Oct89	1385	1181	05Oct89	5
Transfer/Floor	03Oct89	1398	1074	05Oct89	17
Transfer/Floor	03Oct89	1400	1432	05Oct89	18
Transfer/Floor	03Oct89	1434	802	05Oct89	34
Transfer/Floor	03Oct89	1446	1966	05Oct89	21
Transfer/Floor	03Oct89	1466	1771	05Oct89	14
Transfer/Floor	03Oct89	1468	807	05Oct89	15
Transfer/Floor	03Oct89	1489	803	05Oct89	94
Transfer/Floor	03Oct89	1506	1303	10Oct89	304
Transfer/Floor	03Oct89	1507	5784	10Oct89	33
Transfer/Floor	03Oct89	1508	4760	10Oct89	37
Transfer/Floor	03Oct89	1509	1797	10Oct89	46
Transfer/Floor	03Oct89	1510	943	10Oct89	0
Transfer/Floor	03Oct89	1538	2617	10Oct89	65
Transfer/Floor	03Oct89	1595	1075	10Oct89	33

Transfer/Floor	03Oct89	1631	1432	10Oct89	11
Transfer/Floor	03Oct89	1656	1164	10Oct89	11
Transfer/Floor	03Oct89	1660	3452	10Oct89	22
Trans-Corr/N-Wall	04Oct89	28	2953	10Oct89	20
Trans-Corr/N-Wall	04Oct89	70	2805	10Oct89	10

Encl 1