

6/13/79

MEMORANDUM FOR: Jack Sutherland, Chief, Fuel Facility and Materials
Safety Branch, Region II

THRU: George H. Smith, Chief, Fuel Facility and Materials
Safety Branch, Region I

FROM: Robert O. McClintock, Chief, Materials Radiological
Protection Section, FF&MS Branch, Region I

SUBJECT: REQUEST FOR ASSIST INSPECTION U.S. DEPARTMENT OF THE
ARMY AT LEXINGTON-BLUE GRASS DEPOT ACTIVITY (LICENSE
NO. 29-01022-08)

This is to request that you conduct an inspection of the U.S. Department of the Army's, Lexington-Blue Grass Depot Activity, Lexington, Kentucky. We are particularly interested in their procedures during repairs of the AN/UDM-2 Radiac Calibrators. Copies of the license and backup are enclosed.

If you have any questions, please contact me (488-1206) or Myu Campbell of my staff (488-1343). Thank you for your cooperation.

Robert O. McClintock, Chief
Materials Radiological Protection
Section

Enclosures:
As stated

FFMS:MRPS
mm
Campbell:mmm
6/13/79

FFMS:MRPS
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McClintock
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Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 2
FOIA- 2006-0238

II/10



DEPARTMENT OF THE ARMY
HEADQUARTERS US ARMY COMMUNICATIONS AND ELECTRONICS
MATERIEL READINESS COMMAND AND FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703

DRSEL-SF-H

29 May 1979

US Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Sir:

Reference is made to a telephone conversation on 18 May 1979 between Mr. Robert O. McClintock, Chief, Materials Radiological Protection Section, and Mr. Steven A. Horne, this command, subject: Notification of a Possible Incident. This conversation was initiated by this command as a compliance action under US Nuclear Regulatory Commission Byproduct Material License Number 29-01022-08 authorizing the possession and use of the AN/UDM-2 Radiac Calibrator Set, by the Department of the Army.

As was indicated in referenced conversation, this command released for use 250 AN/UDM-2 Radiac Calibrators to various Army installations and activities world-wide. This headquarters was apprised that two calibrators evidenced a mechanical problem such that when the drawer mechanism of the TS-3494/UDM-2 portion of the calibrator was in its outermost open position, the drawer could be removed when pulled under extreme pull-type pressure. The AN/UDM-2 Radiac Calibrator was manufactured in accordance with specifications as required by this command. Examination of the two calibrators revealed that the guide pin holding the drawer in place was manufactured within the lower limit of tolerance.

This command has initiated a mandatory recall program for examination of all AN/UDM-2 Radiac Calibrators to inspect and modify the drawer assembly-guide pin for those calibrators requiring improvement. Calibrators are being returned to Lexington-Blue Grass Depot Activity for this purpose. This action is being taken under referenced NRC license as authorized in Supplement I of application dated 20 April 1978.

As was indicated by Mr. McClintock during referenced conversation, this command was not obligated to report this situation since it was not effected by either Parts 19, 20 or 21 of Title 10, Code of Federal Regulations. However, it is the policy of this command to keep your office

EL-SF-H

Nuclear Regulatory Commission

29 May 1979

fully apprised of the results of this recall/inspection program.

Sincerely yours,

Bm Savaiko

BERNARD M. SAVAIKO
Chief, Safety Office

Copy furnished:
Commander, DARCOM
ATTN: DRCSF-P

S. NUCLEAR REGULATORY COMMISSION
MATERIALS LICENSE
CORRECTED COPY

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purposes(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Department of the Army U. S. Army Communications and Electronics Materiel Readiness Command 2. Fort Monmouth, New Jersey 07703</p>	<p>In accordance with application dated April 20, 1978</p> <p>3. License number 29-01022-08 is amended in its entirety to read as follows:</p>
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Strontium 90</p> <p>B. Strontium 90</p>	<p>4. Expiration date January 31, 1984</p> <p>5. Docket or Reference No.</p> <p>7. Chemical and/or physical form</p> <p>A. </p> <p>B. Sealed sources (U. S. Army Electronics Command Dwg. No. SM-B-509048)</p> <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not to exceed 25 millicuries</p> <p>B. Not to exceed 20 millicuries per source and 20 millicuries total</p>
<p>9. Authorized use</p> <p>A. and B. For possession, storage and use in Model AN.UDM-2 Radiac Calibrators.</p>	

CONDITIONS

- 10. Licensed material shall be used only at the Lexington-Blue Grass Army Depot Active and Department of Defense installations anywhere in the United States.
- 11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."

Date FEB 8 1979

by PAUL R. GUINN
License Management Branch
Division of Fuel Cycle and Material Safety
Washington, D.C. 20555

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MATERIALS LICENSE

Supplementary Sheet
CORRECTED COPY
CONDITIONS

License Number 29-01022-08

Docket or
Reference No. _____

Amendment No. 10

(continued)

- 12. Licensed material shall be used by, or under the supervision of, individuals designated by the U. S. Army.
- 13. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- (3) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the test with the U. S. Nuclear Regulatory Commission, Region I, Office of Inspection and Enforcement, 631 Park Avenue, King of Prussia, Pennsylvania 19406, describing the equipment involved, the test results, and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an Agreement State to perform such services.
- 14. Sealed sources containing licensed material shall not be opened.

For the U. S. Nuclear Regulatory Comm
Original Signed BY
PAUL R. GUNN
License Management Branch
by _____
Division of Fuel Cycle and
Material Safety
Washington, D.C. 20555

Date FEB 8 1979

(continued)

- 15. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material For Transport."
- 16. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in applications dated April 20, 1978 and November 8, 1978. *exempts included*

Date FEB 8 1979

For the U. S. Nuclear Regulatory Commission
 Original Signed By
 PAUL R. OWEN
 by License Management Branch

Division of Fuel Cycle and
 Material Safety
 Washington, D.C. 20555

SUPPLEMENT H

1. Reference: Item 14 of Form NRC-313.

2. The Army program for control of radioactive items of supply is prescribed specifically in two regulations. AR 700-64, Radioactive Commodities in the DOD Supply System, is an interservice regulation which prescribes responsibilities for control of radioactive items and components which are introduced in the supply system. AR 700-52, Licensing and Control of Sources of Ionizing Radiation, establishes requirements for obtaining NRC Licenses for radioactive materials and authorizations to possess radioactive material not controlled by NRC. Major Army commands are implementing these Department of the Army (DA) regulations.

3. The authority contained in the NRC license and DA authorization issued to CERCOM permits Army installations and activities to acquire and use the AN/PDR-39 and AN/PDR-39A Radiac Sets containing the ⁹⁰Strontium sealed check source without obtaining their own license or authorization for these items (a DA authorization is required for radioactive material not controlled under an NRC specific license). This is based upon commitments made by CERCOM that all Army elements will comply with conditions contained in those licenses and authorizations and with pertinent Army regulations. Both NRC and DA require control of all operations involving radioactive items to insure the safety of personnel and property. Army activities possessing licensed radioactive sources and the agencies controlling them are subject to inspection by the NRC in addition to inspection by Army elements.

4. The mission of CERCOM includes the management and performance of all materiel life cycle functions and services and acts as DA licensee for Army-wide distribution of these items. The following is a description of functions of the various CERCOM elements providing a coordinated effort:

a. The functions for the manager of the NRC License are assigned to the Chief, Safety Office of the Command Staff of this headquarters. The responsibilities of the manager are to:

(1) Coordinate, obtain, administer, review, amend and maintain necessary licenses for radioactive commodities managed by this command.

(2) Provide information and guidance to all commanders, with respect to limitations, constraints, conditions or procedures which affect the responsibilities of those commanders for the radioactive commodity.

(3) Monitor the various elements of the life cycle program of the radioactive commodities to assure compliance with conditions of the applicable license.

(4) Assure that licensed material is not transferred to unauthorized persons or organizations.

b. The health physicists serve as the CERCOM staff contact for radiological control and licensing matters to the Army Materiel Development and Readiness Command, other major commands and the Department of the Army elements, other services and federal agencies; provide advice and assistance to other CERCOM elements involved in the fielding of radioactive items, the National Inventory Control Point (NICP) (an element of CERCOM), depots and other Army elements; prepare applications for NRC Licenses for Army-wide distribution of assigned items; prepare radiological safety instructions for incorporation in technical literature and other published guidance pertaining to the items; coordinate with the NICP to assure that requisitioning elements are authorized to and technically capable of receiving the item and that procurements do not exceed the quantity or use limitations imposed by the various licenses; perform pre-award and post award health physics surveys of contractors; provide health physics advice to be included in instructions for disposal of radioactive waste, and serve as staff officers for notification, investigation, and preparation of reports required in the event of an accident or incident in which this command's radioactive items may be involved.

c. The CERCOM NICP located at Fort Monmouth, New Jersey has adopted special procedures for individually controlled radioactive items that are in addition to standard Army Supply practices used for all type classified items. The control point maintains records of procurements, receipts, storage locations, shipments, using locations, authorizes, issues, and assures adequate supply. It reviews requisitions submitted and when approved, issues material release orders to the designated depot for shipment of the material to the requisitioner. Requisitions are submitted through various command control channels. The control point bases its approval on previously established authorization of the requisitioner to receive the item from the supply standpoint such as an approved Table of Allowances. Upon approval of the requisition, the control point issues a material release order to the depot storing the item. The depot ships the item directly to the requisitioner, notifies the control point and furnishes other shipping data which is forwarded also through supply property office channels.

d. Reports of excess items are submitted through various command channels to the NICP for review for serviceability, turn-in or disposal as radioactive waste. Requests for disposition instructions of radioactive waste are submitted through radiological command channels to the NICP.

e. The major Army commands have established regulatory requirements for control of the radioactive items. Each major command has established at the headquarters level a radioactive material control point and appointed a command radiological control officer to administer control of radioactive items within the command. That officer reviews and concurs in the qualifications of local radiation protection officers within the command, maintains records of radioactive items by location and assures periodic inventory and leak tests by using activities, performs periodic inspections/audits of accountable installations/activities to assure that items are properly handled in accordance with Army and NRC regulations, and to assure the submission of inventory and leak test reports and accident/incident reports.

The local radiation protection officer is responsible for administering the local radiation protection program. Local programs provide for designated controlled areas, dosimetry, instrumentation, operating procedures to supplement published manuals for the items, receipts, transfers, storage and records. Requisitions originated by using elements are processed through the local radiation protection officer to the major command radiation control officer. The requisition is reviewed from the radiation protection standpoint and logistics authority for possession. If approved, the requisition is forwarded to the NICP. Upon receipt of notification from the NICP of the transaction the information is forwarded to the local radiation protection officer who assumes radiation protection responsibility for the item. Requests for transfers of items between installations/activities are reviewed by the command radiological control officer and if approved reported to the NICP. Transfers outside the major commands are reviewed and approved by the NICP. Reports of excess items are submitted through radiological control channels for review for serviceability, turn-in or disposal as radioactive waste. Requests for disposition instructions of radioactive waste are submitted through radiological command channels to Commander, USACERCOM, ATTN: DRSEL-SF-H, Fort Monmouth, New Jersey 07703.

f. SAAD will provide bulk storage, leak test analyses, quality surveillance and issue of the AN/PDR-39 and AN/PDR-39A Radiac Sets when approved by the NICP. Where radioactive materials are involved, SAAD has established special warehousing facilities, handling procedures and has established a formal radiation protection program administered by a qualified physicist (RPO). Mr. Frederick T. Toyama has been designated to serve in this capacity. Radioactive items are inspected when received, at intervals during storage and immediately before shipment. The inspections are conducted according to established surveillance procedures as determined by CERCOM for each item. The quality surveillance program for the AN/PDR-39 and AN/PDR-39A Radiac Sets will be performed by either the SAAD RPO, his alternates or the CERCOM health physicists and will involve the annual leak testing of a random sampling of at least one percent of depot assets and/or a minimum of five each of the AN/PDR-39 and AN/PDR-39A Radiac Sets, whichever is greater. SAAD will provide the results to Commander, USACERCOM, ATTN: DRSEL-SF-H, Fort Monmouth, New Jersey 07703. Appropriate action will be taken if results indicate a trend toward leakage. SAAD will provide the NICP with notification of individually controlled item receipts, inspections and shipments. The qualifications of the SAAD RPO, his alternates and the SAAD radiation protection program is described in the supporting documentation to their NRC Byproduct Material License Number 04-04279-01.

g. The program for control of the AN/PDR-39 and AN/PDR-39A Radiac Sets, as with other radioactive items is, to the extent practical, the same logistics procedures applied to other Army supplies. Regulatory guidance has been established by DA and implemented by the various commands, governing the management process, life-cycle management of material, logistics management and support, procurement, maintenance, storage, transportation, including packaging and disposal. For radioactive items the procedures are augmented by specific regulatory controls pertaining to the possession and use of radioactive materials, control of personnel radiation exposure, safe

storage, handling, maintenance, transportation and disposal of the items. For the AN/PDR-39 and AN/PDR-39A Radiac Sets, more stringent controls have been established as distribution of these devices are limited to authorized activities. These controls include identifying and insuring that the AN/PDR-39 and AN/PDR-39A Radiac Sets are coded in the Commodity Command Standard System Automated Data Processing Program as radioactive in accordance with Appendix A of AR 708-1, Cataloging and Supply Management Data. This commodity is coded with a Special Control Item Code of B meaning Regulated-Principal and Radioactive. Requisitions are processed initially by computers and then are manually processed by the NICP item manager to verify that the requisitioners are authorized to receive the radiac sets. To insure that the above requirements are being implemented, the CERCOM Health Physicists maintain close coordination with the item manager. In addition to SAAD, health physics laboratory counting equipment capable of measuring 0.001 microcuries are also available from LBAD for the evaluation of the six month leak test smears of the radiac sets. Leak test results are forwarded through Army channels to Commander, USACERCOM, ATTN: DRSEL-SF-H, Fort Monmouth, New Jersey 07703.

h. Users of the AN/PDR-39 and AN/PDR-39A Radiac Sets are provided with specific instructions on the operation, maintenance, theory and field maintenance as described in TM 11-5514A. This information satisfies the radiation protection instructions to users as required by Title 10, Chapter 1, Code of Federal Regulations, Parts 19 and 20. Commander, USACERCOM, ATTN: DRSEL-SF-H, Fort Monmouth, New Jersey 07703, will make available to the users the appropriate NRC regulations, the NRC license, license conditions, documents incorporated into the license by reference, and amendments thereto, and any notice of violation involving radiological working conditions for examination. The following statement, or equivalent, will also be provided to the users along with Form NRC-3, Notice to Employees:

Users of the AN/PDR-39 and AN/PDR-39A Radiac Sets are provided with specific instructions on the operation, maintenance, theory and field maintenance as described in Technical Manual 11-5514A. This information satisfies the radiation protection instructions to users as required by Title 10, Chapter 1, Code of Federal Regulations, Parts 19 and 20. Form NRC-3, Notice to Employees, is also being provided with this letter and users are requested to post this notice as required by the regulations. In addition, users may request further information relating to the NRC license, license conditions, documents incorporated into the license by reference, and amendments thereto, from Commander, USACERCOM, ATTN: DRSEL-SF-H, Fort Monmouth, New Jersey 07703. The Command Safety Office may be contacted by telephone on AUTOVCN 992-3493 for this purpose.

SUPPLEMENT B

1. Reference: Items 4,8 and 9 of Form NRC-313.
2. Users of the AN/PDR-39 and AN/PDR-39A Radiac Sets do not require specific radiation protection training other than their familiarization with Technical Manual (TM) 11-5514A, Radiac Sets AN/PDR-39 and AN/PDR-39A. However, individuals using these instruments are ordinarily, as a minimum, members of a unit Nuclear, Biological, Chemical (NBC) team. Membership in a unit NBC team carries a requirement of 16 hours of NBC training, including the use of the radiac instrument as well as some training in radiation protection and radioactivity measurement. The use of these instruments is supervised by the unit NBC officer or NBC noncommissioned officer having at least 80 hours of NBC training, including training in radiation protection and radioactivity measurement.

SUPPLEMENT G

1. Reference: Item 12 of Form NRC-313.

2. Film badges, dosimeters and bioassay procedures will not be implemented for individuals using the AN/PDR-39 and AN/PDR-39A Radiac Sets because it is unlikely that such individuals would receive a dose in any calendar quarter in excess of 25 percent by the applicable value specified in 10 CFR 20.101 from these radiac sets.



Section II. DESCRIPTION AND DATA

7. Purpose and Use

(fig. 1-1)

a. *Purpose.* Calibrator Set, Radiac AN/UDM-2 (consisting of two main sections (b below)) provides the facilities for checking the operational reliability and calibration accuracy of various radiacmeters and radiac sets.

b. *Use.* Calibrator, Radiac TS-3495/UDM-2 (discharge well assembly) is used to check Radiacmeters IM-93(*)/UD, IM-147/PD, and IM-9E/PD (dosimeters). Calibrator, Radiac TS-3494/UDM-2 (RATEMETER assembly) is used to check Radiacmeter IM-174(*)/PD (radiacmeter), Radiac Set AN/PDR-27(*) (radiac set), Radiac Set AN/PDR-60, and Aerial Radiac System AN/ADR-6.

1-8. Technical Characteristics

Type of radioactive isotope in each source capsule Strontium-Yttrium 90 (Sr-Y90).
Decay of isotope 27.7 years half life.

Quantity of isotope:
Discharge well assembly... Three encapsulated sources of 25 millicuries each. One encapsulated source of 20 microcuries.

RATEMETER assembly One encapsulated source of 25 millicuries.

Type of radiation emitted..... Beta particles.

Bremmstrahlung produced..... Radiation dose rate from sources (4) no greater than 2 millirads per hour at outer case surface.

Maximum range of beta particles in air..... 30 feet.

Stopwatch indication..... Two indications:
a minute hand for a maximum of 30 minutes and a second hand for a maximum of 60 seconds.

1-9. Items Comprising an Operable Calibrator Set, Radiac AN/UDM-2

(figs. 1-1, 1-2, and 1-3)

The components of the AN/UDM-2 that make up an operable equipment are listed in table 1-1.

Table 1-1. Items Comprising an Operable Calibrator Set, Radiac AN/UDM-2

NSN	Item	Qty	Dimensions (in.)			Wt (lb)
			Height	Depth	Width	
6665-00-610-1487	Calibrator, Radiac TS-3494/UDM-2	1	5	12	12	10 1/2
6665-00-610-1496	Calibrator, Radiac TS-3495/UDM-2	1	3 1/4	12	12	13 1/4
Not available	Adapter, AN/ADR-6	1	2 3/8	3 1/4	2 1/4	3/8
Not available	Adapter probe, AN/PDR-60	1	3/8	5	1/8
Not available	Stopwatch	1
Not available	Spacer block	1	3 3/8	2 1/2	1 1/4	1/2

1-10. Description of Calibrator Set, Radiac AN/UDM-2

Calibrator Set, Radiac AN/UDM-2 (fig. 1-1) consists of two major assemblies, Calibrator, Radiac TS-3495/UDM-2 and Calibrator, Radiac TS-3494/UDM-2, plus the AN/PDR-60 adapter probe, and the AN/ADR-6 adapter. Each major assembly is housed in one-half of a waterproof, aluminum case.

A handle is provided on each assembly to facilitate handling.

a. *Calibrator, Radiac TS-3495/UDM-2* (fig. 1-2). The discharge well assembly consists of a discharge well, a

dosimeter shelf, and a stopwatch. The dosimeter shelf contains 30 holes (to hold dosimeters to be tested) and the discharge well. The discharge well contains four Sr-Y90 sources (one 20 microcurie source and three 25 millicurie sources). The sources are arranged to radiate into a central cavity. Two fields of radiation are provided within the discharge well; one field is provided by the 20-microcurie source (upper field), the other field is provided by the three 25-millicurie sources (lower field). The upper field will cause Radiacmeter IM-9E/PD to discharge but will have no effect on Radiacmeter IM-93(*)/PD or IM-147/PD. The lower field will cause the IM-93(*)/PD or the IM-147/PD to discharge and will also cause the IM-9E/PD to discharge within two seconds. An access hole in the top of the discharge

well provides access to the radiation fields in the cavity. The cavity is vertically placed in the discharge well. The lower field of radiation is closed off from the access hole by a spring-loaded platform. This spring-loaded platform is opened when a dosimeter is inserted deep into the access hole. A spring-loaded swivel cover attached to the top of the discharge well covers the access hole. The key-operated lock is mounted on the swivel

cover to prevent accidental exposure of the access hole. The swivel cover is moved side to side to expose the access hole and will move back over the access hole when the cover is released. A shipping lock is also mounted on the swivel cover to prevent accidental movement of the cover during transit. The stopwatch, mounted on the swivel cover, times the period of exposure for the dosimeter being checked.

CHAPTER 3 OPERATING INSTRUCTIONS

3-1. General

WARNING

Radioactive materials are used in this equipment. Read and understand all operational data and procedures in this chapter *before* using the equipment. Become thoroughly familiar with the contents of TB 11-6665-227-12. Never look directly into the access hole (fig. 1-2) when the swivel cover is swung open; do not poke sharp pointed objects into the access hole. This equipment will be used only under the direction of a Radiological Protection Officer.

Table 3-1 lists all controls and indicators used by the operator. In addition, this chapter contains the follow-

ing:

- a. Procedures for checking Radiacmeters IM-9E/PD, IM-93(*)/UD, and IM-147/PD (para 3-3).
- b. The procedures for checking Radiacmeter IM-174(*)/PD (para 3-4).
- c. The procedures for checking Radiac Set AN/PDR-27(*) (para 3-5).
- d. The procedures for checking Radiac Set AN/PDR-60 (para 3-6).
- e. The procedures for checking Aerial Radiac System AN/ADR-6 will be given in paragraph 3-7 when they become available.

3-2. Controls and Indicators

All operator controls and indicators are listed in table 3-1.

Table 3-1. List of Controls and Indicators

Control or indicator	Function
Calibrator, Radiac TS-3495/UDM-2 (fig. 1-2): Stem (stopwatch).....	Stops, starts, and winds stopwatch. Positions seconds indicator to zero (60) and minutes indicator to zero (30) for reuse.
Second indicator (stopwatch).....	Indicates elapsed time from 0 to 60 seconds.
Minute indicator (stopwatch).....	Indicates elapsed time from 0 to 30 minutes.
Key.....	Unlocks swivel cover allowing it to be swung open.
Swivel cover (spring-loaded).....	Allows dosimeter entry into access hole.
Calibrator, Radiac TS-3494/UDM-2 (fig. 1-3): Shutter.....	Rotated to select radiation fields of 10 rad/hr or 100 rad/hr.
Key.....	Unlocks shutter allowing it to be rotated.

3-3. Dosimeter Checking

To check an IM-9E/PD perform the procedures in *a* and *b* below. To check an IM-93(*)/UD or IM-147/PD perform the procedures in *a* and *c* below. Various dosimeters react differently when checked in the discharge well assembly. Table 3-2 lists the different types of dosimeters, their manufacturer, procurement number and year of manufacture, and the discharge well assembly position, total exposure or discharge time and the discharge readings. Refer to table 3-2 and discharge the dosimeter in the position shown for the period of time listed. Start the stopwatch immediately after the dosimeter is in its discharge position. For information pertaining to the operation of dosimeters, refer to TM

11-6665-214-10.

a. Precheck Procedures.

- (1) Examine the dosimeter (and clean it if necessary) to insure that it will not carry mud or dirt into the access hole.
- (2) Remove the DA Calibration Certification Label from the dosimeter.
- (3) After examination, charge the dosimeter to a zero indication (TM 11-6665-214-10).
- (4) Insert the key in the discharge well assembly lock and release the lock (fig. 1-2).
- (5) Swing the swivel cover on the discharge well to one side enough to expose the access hole. Reset and wind the stopwatch, if necessary.