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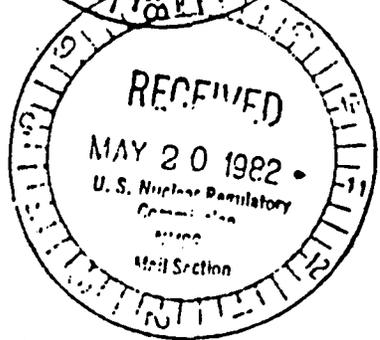
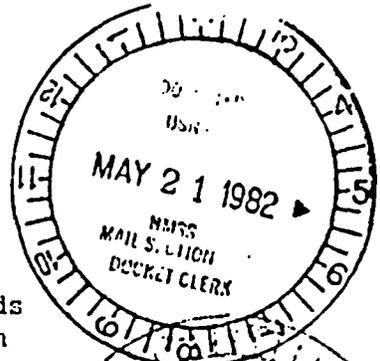
DEPARTMENT OF THE ARMY
HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA. 22333

~~ADULT~~
PDI

DRCSF-P/82-0057

12 May 1982

Return to
39655



Director
Nuclear Material Safety and Safeguards
ATTN: Radioisotopes Licensing Branch
US Nuclear Regulatory Commission
Washington, DC 20555

Reference: Mail Control Number 20394

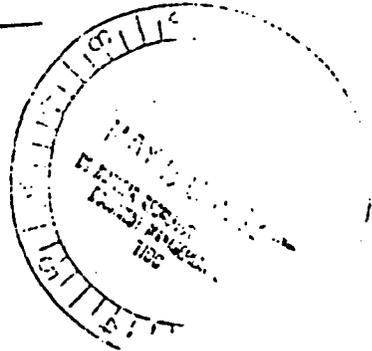
Gentlemen:

Forwarded is US Army Communications-Electronics Command request for amendment to Source Material License Number SMB-1300. This request is to list Anniston Army Depot as performing maintenance on night vision devices in addition to Sacramento Army Depot, identifies radiation measurement equipment, return of night vision devices to Sacramento or Anniston Depots for repair, replacement or disposal, Direct Support/General Support maintenance echelons should be authorized for replacement of any Detector-Dewar and Optical Imager, and lists Jay L. Henson as Radiation Protection Officer at Anniston Army Depot.

Please acknowledge receipt of correspondence on inclosed DA Form 209 Mail Reply Card.

Sincerely,

DARWIN H. CARAS
Chief, Health Physics
Safety Office

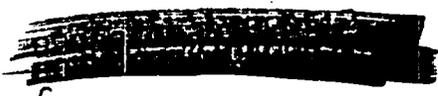


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as

CF:
HQDA(DASG-PSP-E) WASH DC 20310 w/incl 2 cys
Dir, DARCOM FSA, Charlestown, IN 47111 w/incl
Cdr, US Army Communications-Electronics Command, ATTN: DRSEL-SF-MR, Fort Monmouth, NJ 07703 w/o incl

QQ/5

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

REPLY TO
ATTENTION OF:

DRSEL-SF-MR

7 MAY 1982

SUBJECT: US Nuclear Regulatory Commission (NRC) Source Material License
Number SMB-1300

Commander
US Army Materiel Development and Readiness Command
ATTN: DRCS, P
5001 Eisenhower Avenue
Alexandria, Virginia 22333

1. Reference is made to the following:

a. Letter, DRSDS-QM, dated 14 January 1982, subject: Depot Maintenance Support of Abrams Tank Components.

b. FONECOM, 26 March 1982, between Mr. Jay L. Henson, Anniston Army Depot (ANAD) Safety Office, and Ms. Patricia A. Elker, this office, subject as above (SAB).

c. Letter, DRSEL-SF-H, dated 24 February 1982, subject: Renewal and Complete Revision of US Nuclear Regulatory Commission (NRC) Source Material License Number SMB-1300.

d. Amendment Number 06, dated 1 April 1982, to subject license, Reference Number 040-08598, dated 2 May 1977.

e. 1st Indorsement, SDSAH-DAS-SF, undated, subject: Application for Renewal and Complete Revision of US Nuclear Regulatory Commission (NRC) Source Material License Number SMB-1300.

2. As indicated in reference 1a and 1b, ANAD will be performing maintenance tasks for night vision equipment. Reference 1c documentation should be inclusive of the following additional information:

a. Supplement B, paragraph 2 should indicate maintenance of assets containing radioactive materials to be performed at Sacramento Army Depot (SAAD), Sacramento, California and ANAD, Anniston, Alabama.

b. Supplement E, paragraph 4 identifies radiation measurement instrumentation to be the Nuclear Measurements Corporation Proportional Counters and the Eberline Instrument Corporation Scintillation Counter. ANAD utilizes the Baird Atomic (BA) Two Pi Flow Proportional Counter. Radiation measurement instrumentation shall be as specified or equivalent commercial instrumentation.

7 MAY 1982

DRSEL-SF-MR

SUBJECT: US Nuclear Regulatory Commission (NRC) Source Material License
Number SMB-1300

c. Supplement F, paragraph 3 should indicate the specific instrumentation or commercial equivalent instrumentation to be calibrated as recommended by the manufacturer.

d. Supplement H, paragraph 2 should indicate return to either SAAD or ANAD for disposition, i.e. repair, replacement, or disposal as radioactive waste.

e. Supplement I, paragraph 4e and 4i should indicate SAAD and ANAD for provision of maintenance and serviceability of night vision equipment. In addition, paragraph 4e should specify the designated Radiation Protection Officer at ANAD to be Mr. Jay L. Henson.

f. Supplement I, paragraph 4n should indicate SAAD and ANAD pertaining to maintenance functions. In addition, the Direct Support/General Support maintenance echelons should be authorized for replacement of any Detector-Dewar and Optical Imager module.

3. Inclosures 1-5 provide the corrected Supplements inclusive of the additional information specified in paragraph 2 for incorporation within reference 1c documentation and to be reflected in reference 1d license amendment.

4. Reference 1e (Incl 6) is the concurrence provided by ANAD to subject license with regards to their compliance with the requirements contained in subject license.

5. Request amendment to subject license be granted to include indicated changes. POC this headquarters is Mr. Barry J. Silber or Ms. Patricia Ann Elker, Commercial (201) 544-4427.

FOR THE COMMANDER:

6 Incls (8 copies)
as

Steve Attone for
BERNARD M. SAVAIKO
Chief, Safety Office

SUPPLEMENT B

1. Reference: Item 4 of Form NRC-2.
2. Commodities containing radioactive material will be possessed, maintained and used by US Department of Defense (DOD) installations and activities worldwide under the control of Department of the Army (DA) military or civilian personnel. Maintenance of assets containing radioactive material will be performed at Sacramento Army Depot (SAAD), Sacramento, California, and Anniston Army Depot (ANAD), Anniston, Alabama. In addition, bulk storage only of assets containing radioactive material will be provided by New Cumberland Army Depot (NCAD), New Cumberland, Pennsylvania, Red River Army Depot (RRAD), Texarkana, Texas, and Sharpe Army Depot (SHAD), Lathrop, California.

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SUPPLEMENT E

1. Reference: Item 11(a) of Form NRC-2.
2. The depots responsible for bulk storage, maintenance, serviceability, surveillance and issue of thermal imaging systems possess radiation detection/measurement instrumentation for monitoring and measuring the radiation emitted from these devices.
3. Radiation detection instrumentation: They are the AN/PDR-54, AN/PDR-56F and AN/PDR-60 standard Army alpha detection instruments (radiac sets) or commercial equivalent instrumentation such as the Eberline Instrument Corporation (EIC) PAC series portable alpha survey instruments. In addition, these depots possess, as a minimum, the AN/PDR-27() standard Army beta-gamma detection instrument or commercial equivalent instrumentation for beta-gamma radiation detection. The sensitivity range of the AN/PDR-54 Radiac Set is zero to $1.00E+05$ counts per minute (cpm) in three decade scales, the AN/PDR-56F Radiac Set is zero to $1.00E+06$ cpm in four decade scales, and the AN/PDR-60 Radiac Set is zero to $2.00E+06$ cpm in four decade scales. The sensitivity range for the AN/PDR-27() Radiac Set is zero to 500 mR/hr in four decade scales.
4. Radiation measurement instrumentation: They are the Nuclear Measurements Corporation (NMC) Model PC-3A or PC-4 Internal Proportional Counter, the Baird Atomic (BA) Two Pi Gas Flow Proportional Counter Model FC-72A/WS or equivalent commercial instrumentation. In addition, depots may possess the EIC Model SAC-3A Scintillation Counter or commercial equivalent instrumentation.

incl d

SUPPLEMENT F

1. Reference: Item 11 (b) of Form NRC-2.
2. The AN/PDR-54, AN/PDR-56F and AN/PDR-60 standard Army alpha detection instruments and the AN/PDR-27 () standard Army beta-gamma detection instrument used for health and safety purposes are calibrated in accordance with the frequency specified in Technical Bulletin 43-180, Calibration Requirements for the Maintenance of Army Materiel, and procedures prescribed in the technical manuals issued with the instruments. Presently, the calibration frequency specified is once every 90 days. Calibration standards used for the AN/PDR-54 and AN/PDR-60 are the AN/UDM-6 and AN/UDM-7C ²³⁹Plutonium Radiac Calibrator Sets. The calibration standard used for the AN/PDR-56F is the AN/UDM-7C Radiac Calibrator Set. Calibration standards used for the AN/PDR-27 () are the AN/UDM-1 (⁶⁰Cobalt), AN/UDM-1a (¹³⁷Cesium) or equivalent. All calibration standards are certified by, or traceable to, the National Bureau of Standards (NBS).
3. The NMC Model PC-3A, Model PC-4, the EIC Model SAC-3A, and the BA Two Pi Gas Flow Proportional Counter or equivalent commercial instrumentation are calibrated as recommended by the manufacturer with calibration reference sources certified by, or traceable to, the NBS.

SUPPLEMENT H

1. Reference: Item 12(b) of Form NRC-2.
2. In the event that ThF_4 coated optics are badly scratched, deformed or otherwise defective, they will be returned by either Direct Support/General Support (DS/GS)* maintenance echelons or to SAAD or ANAD for disposition, i.e., repair, replacement, or disposal as radioactive waste.
3. Appropriate warning and caution instructions to thermal imaging systems are incorporated into the technical manuals for these equipment as indicated in Supplement I of this license application.

* The DS/GS function also refers to the comparable aircraft maintenance echelon, i.e. Aviation Unit Maintenance and Aviation Intermediate Maintenance.

end

SUPPLEMENT I

1. Reference: Item 12(c) of Form NRC-2.

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 Systems, is an interservice regulation which prescribes responsibilities for control of radioactive items and components which are introduced in the supply system. AR 385-11, Ionizing Radiation Protection, establishes requirements for obtaining NRC licenses for radioactive materials and authorizations to possess radioactive material not controlled by NRC, and requirements for individually controlled items of supply, the transportation of radioactive materials and the disposal of unwanted radioactive material. Major Army commands are implementing these DA regulations.

3. The authority contained in NRC licenses and DA authorizations issued to CECOM permits DOD installations and activities to acquire and use thermal imaging systems incorporating ThF_4 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 CECOM that all Army elements will comply with conditions contained in those licenses and authorizations and with pertinent Federal, DOD and 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 CECOM 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 CECOM elements providing a coordinated effort:

a. The functions for the manager of the NRC License/DA Authorization 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/authorizations 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/authorization.

encl 5

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

b. The health physicists serve as the CECOM staff contact for radiation control and license/authorization matters to the Army Materiel Development and Readiness Command (DARCOM), other major commands and DA elements, other services and federal agencies; provide advice and assistance to other CECOM elements involved in the fielding of radioactive items, the National Inventory Control Point (NICP) (an element of CECOM), depots and other Army elements; prepare applications for NRC Licenses/DA Authorizations for Army-wide distribution of assigned items; prepare radiation 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 the 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 CECOM NICP located at Fort Monmouth, New Jersey has adopted 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. Similar NICP procedures have been implemented by other DARCOM Major Subordinate Commands (MSC) who have PICA responsibilities for the assigned major weapon system. 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 authorizations 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. 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 radiation control officer to administer control of radioactive items within the command. That officer reviews and concurs in the qualifications of local RPO's 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 to the appropriate commodity command as required

by Army regulations. The local RPO 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 RPO 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 radiation 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 command channels to the NICP for review for serviceability, turn-in, or disposal as radioactive waste. The NICP, in conjunction with assistance and directives provided by health physicists of the CECOM Safety Office, determines the disposition of the excess items.

e. NCAD, RRAD, and SHAD will provide bulk storage, surveillance and issue of thermal imaging systems. In addition, SAAD and ANAD will provide maintenance and serviceability of these equipment. There will be no maintenance and serviceability performed involving the grinding or removal of the ThF_4 coatings from these equipment. Where radioactive materials are involved, the depots have established special warehousing facilities, handling procedures and have established formal radiation protection programs administered by qualified RPO's. Mr. Jay L. Henson (ANAD), Mr. Henry Newlin (NCAD), Mr. John D. Rayburn (RRAD), Mr. Herman McGrew (SAAD) and Mr. Eugene Ernest (SHAD) have been designated to serve in this capacity. 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 CECOM for each item. The quality surveillance procedures for thermal imaging systems containing ThF_4 coatings will be performed by the depot RPO, his alternates or the CECOM health physicists and will involve the annual visual inspection of a random sampling of at least six (6) each FLIR assets for flaking and/or pitting of the ThF_4 coatings. The depots will provide the NICP with notification of individually controlled item receipts, inspections and shipments.

f. The program for control of thermal imaging systems, 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 these items. For thermal imaging systems, more stringent controls have been established as distribution of these devices are classified confidential and due to their high dollar value, are limited to

authorized activities. These controls include identifying and insuring that these systems are coded in the Commodity Command Standard System (CCSS) Automated Data Processing Program as radioactive in accordance with Appendix A of AR 708-1, Cataloging and Supply Management Data. These systems are coded with a Special Control Item Code (SCIC) of 8 meaning Radioactive Item, A meaning Regulated and contains a Radioactive Item, or B meaning Regulated-Principal and contains a Radioactive Item. Requisitions are processed initially by computers and, due to their radioactive SCIC designation and their high dollar value, are then processed manually by the NICP item manager to verify that the requisitioners are authorized to receive the item.

g. It is DA philosophy for one DARCOM MSC to obtain an NRC license for the possession and use of single type radioactive commodities while having other MSC's responsible for the management of fire control systems incorporating these commodities. In essence, this means that in the case of fire control systems, the primary armament subsystem manager will have the fire control responsibility for the weapon system. He, in turn, will be supported by the secondary armament material readiness manager and any other materiel readiness managers as required. This means that the weapon system manager will maintain full responsibility for its fire control system and ancillary subsystems.

h. The program for control of thermal imaging devices as it relates to this command and the weapon system managers, i.e., other DARCOM MSC's is implemented by effected Memorandums of Understanding/Support Agreements which includes the following:

(1) CECOM will:

(a) Perform all duties as indicated in this radiation protection program.

(b) Maintain required NRC license.

(c) Review proposed design and literature changes that may effect the NRC license.

(d) Coordinate with other DARCOM MSC's at the time of renewals/amendments of NRC license.

(e) Assure that all radioactive components are coded on the CCSS with an SCIC of either 8, A or B.

(f) Furnish all applicable contract data statements/test procedures to the effected DARCOM MSC's.

(2) Effected DARCOM MSC's will:

(a) Insure that the thermal imaging systems and subsystems assigned to them are coded in the CCSS with an SCIC of either 8, A or B.

(b) Insure that the Troop Authorization and Equipment Distribution Program World-wide Asset Quarterly Posture pertaining to these items are furnished to the CECOM Safety Office.

(c) Insure that all procurements pertaining to these items are coordinated with the CECOM Safety Office.

(d) Insure that all radioactive items assigned to them are disposed of as radioactive waste and notify the CECOM Safety Office annually of the total number disposed.

(e) Insure that the technical literature contain the required radiation warnings and that proposed changes effecting these warnings are coordinated with the CECOM Safety Office.

(f) Inspect depots not inspected by CECOM annually to determine compliance with NRC licenses and regulations. This shall include annual quality assurance inspections of thermal imaging systems and subsystems under their purview.

(g) Insure that all optical elements and lens coatings of thermal imaging systems and subsystems are in compliance with Title 10, Code of Federal Regulations and with NRC license requirements and regulations.

i. Further controls involve the following:

(1) The objective lenses will be procured with the wideband MLAR (ThF₄) coating already applied.

(2) In the field, normal optical cleaning procedures will be utilized by the users. The Army will not perform any maintenance involving the removal of the MLAR coatings or its replacements.

(3) Replacements of thermal imaging components containing ThF₄ coatings may be performed at DS/GS levels. This is the intermediate maintenance level between the user and SAAD or ANAD.

(4) Maintenance of the Night Vision devices containing the ThF₄ coatings will be performed at SAAD or ANAD. This maintenance will not include grinding or the removing of the ThF₄ coatings off of the thermal imaging components.

j. Warning instructions as contained in both the operator's manuals, the DS/GS Maintenance manuals, and the Depot Maintenance Work Requirements for thermal imaging systems contain the following notices:

Warning

Radiation Hazard

The antireflective coating on all infrared optics contain thorium fluoride which is slightly radioactive. The only potential hazard involves ingestion (swallowing or inhaling) of this coating material. Dispose of broken lenses etc, in accordance with AR 385-11.

k. The following illustrate operating instructions listed in the operators manuals for various Night Vision devices:

Caution

This equipment is a precision electro-optical instrument and must be handled carefully

Caution

Do not use M1 antifogging kit on front lens of night sight, as this will degrade the infrared image. See lens cleaning instructions, table 3-1.

Caution

The boresight collimator is a precision optical instrument and must be handled carefully. Do not drop.

1. The maintenance instructions for the various preventive maintenance checks and services for eyepiece and front lenses are inclusive of the following information as applicable to the Night Vision device:

(1) Examine lenses for scratches, chips, or cracks. Report any damage to direct support/general support maintenance. Inspect for dirt, dust, oil, and fingerprints.

(2) Clean lenses (if necessary).

Caution

To avoid scratches on lens coating, do not rub cleaning solution on surface. Use only approved materials and procedures for cleaning lenses.

(a) Flush off surface of lens with potable water (clean water, suitable for drinking) to remove dust and grit.

(b) Thoroughly moisten a pad of cotton from night sight lens cleaning kit with lens cleaning solution.

(c) Apply lens cleaning solution to lens by dabbing lightly (do not rub) until surface is evenly covered.

(d) Wait one to three minutes depending on condition for solution to loosen heavy contamination (do not allow solution to dry).

(e) Flush off the solution with potable water.

(f) Repeat steps (b) through (d) until heavy contamination is removed.

(g) Clean lens in small sections by applying cleaning solution and gently wiping with clean pad.

Caution

Wiping motion should be accomplished in one direction only. The pad thus contaminated should be immediately discarded and not used for further cleaning.

(h) Rinse lens with potable water.

(i) Dry lens by wiping lightly in a single direction only with clean cotton pad.

(j) During freezing weather, the lenses may be cleaned by using warm (not hot) potable water and cleaning solution mixed with warm potable water.

m. The operator's troubleshooting is limited to the replacement of the battery, replacement of the coolant cartridge, and cleaning of the lenses. The statement below is incorporated into preventative maintenance instructions. If these steps do not restore the night sight to operation, the operator is referred to DS/GS maintenance.

Caution

The lens surface coating is easily damaged. Use extreme care to protect it from dirt, dust, fingerprints and humidity whenever possible. Do not breathe on lens surface, or use any cleaning or defogging material that is not specially approved for this application.

n. The maintenance concept for the various end item thermal imaging systems authorizes only DS/GS personnel to perform any required maintenance functions. The only common modules authorized at this maintenance level for replacement are the Detector-Dewar and the Optical Imager. All other maintenance functions pertaining to those devices will be performed at SAAD and ANAD. This maintenance will not include grinding or the removing of the ThF₄ coatings off of the common modules.

o. Since the ThF₄ is used solely on IR objective lenses and would never be used in the proximity of the eye, there does not appear to be any danger to personnel using equipment which contains the coated objective lenses.

p. Based on the low exposure potential, the instructions contained in the technical literature are considered sufficient radiation safety control over the user.

q. On all procurements, the Army will require that the contractors test the thermal imaging components containing the ThF₄ coated optics to insure that these devices comply with all specifications and with Title 10, Code of Federal Regulations. The method of testing must be approved by the Government.

Additionally, a small number of these devices will be selected at random to be independently tested to insure that the material complies with all specifications. The independent test will be performed either by Government personnel at a Government facility, or by an independent testing contractor.

r. ThF_4 coated lenses are excepted from specification packaging, markings and labeling, and are excepted from the provisions of Title 49, Code of Federal Regulations, Part 173.393. The shipper is advised to include the following notice on all shipments:

(1) "This shipment is exempt from DOT specification packaging, marking, and labeling requirements IAW Title 49 CFR 173.391."

(2) The purpose of this instruction is to avoid confusing shippers and transportation control personnel as a result of the labeling requirements imposed by the NRC for the carrying and shipping case and the assemblies within the systems which contain the ThF_4 coated elements. Army users will not be required to monitor shipping containers.

SDSAN-DAS-SF (6 Apr 82) 1st Ind

SUBJECT: Application for Renewal and Complete Revision of US Nuclear
Regulatory Commission (NRC) Source Material License Number
SMB-1300

Safety Office, Anniston Army Depot, Anniston, AL 36201

TO: Commander, US Army Communications-Electronics Command and Fort
Monmouth, ATTN: DRSEL-SF-H, Fort Monmouth, New Jersey 07703

Concur in subject application.

FOR THE COMMANDER:


PERRY L. INGRAM
Safety Director