

ARMY REGULATION

No. 700-52

HEADQUARTERS
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LOGISTICS

LICENSING AND CONTROL OF SOURCES OF IONIZING RADIATION

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1. Purpose. This regulation—

a. Provides procedures for the submission of applications for U.S. Atomic Energy Commission licenses for byproduct, source, and special nuclear materials.

b. Prescribes procedures for control of radioactive materials not licensed by the U.S. Atomic Energy Commission.

c. Provides guidance for Department of Army agencies in procuring, coordinating, or controlling the use of radioactive materials and certain other sources of ionizing radiation.

2. Applicability. The provisions of this regulation apply to all Department of the Army agencies other than Corps of Engineer Civil Works Program and Civil Defense elements applying for the use of unlicensed radioactive materials, accelerator produced or natural items such as radium, or U.S. Atomic Energy Commission licenses for byproduct, source, and special nuclear materials which will be possessed, used, stored, or disposed of within the United States and its territories and possessions. U.S. Atomic Energy Commission licenses are not required for byproduct, source, or special nuclear materials possessed, used, stored, or disposed of by Department of the Army agencies outside of the United States and its territories

and possessions. It should be noted, however, that a license may be in effect for using byproduct material in items of issue. Procedural controls established for the item by the Atomic Energy Commission and Department of Army will be observed subject to requirements of the host country. Where a conflict of regulations exist the more restrictive regulations should be followed. This regulation is not applicable to the procurement or use of radioactive materials in nuclear weapons, or of fuel for nuclear reactors established in accordance with provisions of section 91, Atomic Energy Act of 1954, or to the operations of the Defense Atomic Support Agency.

3. Definitions and general information. *a. Ionizing radiation.* Electromagnetic or particulate radiation which may cause ionization within cells of the body. For purposes of this regulation alpha and beta particles, gamma rays, X-rays, and neutrons are examples of ionizing radiation.

b. Radiation sources. Materials, equipment, or devices which generate or are capable of generating ionizing radiation, including (1) naturally occurring radioactive materials, (2) byproduct materials, (3) source materials, (4) special nuclear materials, (5) fission products, (6) materials containing induced or deposited radioactivity, (7)

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radiographic and fluoroscopic equipment, (8) particle generators and accelerators, and (9) radio frequency generators which utilize klystrons, magnetrons, or other electron tubes which produce X-rays.

c. Radiological protection officer. An individual designated by the commander or activity to provide consultation and advice on the degree of hazards associated with ionizing radiation and the effectiveness of measures to control these hazards. This individual must be technically qualified by virtue of education, training, and/or professional experience to assuer a capability commensurate with the assignment. The term "Radiological Protection Officer" is a functional title and is not intended to denote a commissioned status or a job classification with the Armed Forces. See AR 40-14.

d. Byproduct materials. Any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material.

e. Source material. Uranium or thorium or a combination thereof, in any physical or chemical form or ores which contain, by weight, one-twentieth of one percent (0.05 percent) or more of uranium, thorium or any combination thereof. Source material does not include special nuclear material.

f. Special nuclear material. Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, or any other material which the U.S. Atomic Energy Commission pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, 42 U.S.C. § 2071, determines to be special nuclear materials, but does not include source material; or any material artificially enriched by any of the foregoing but does not include source material.

g. Radioactive materials. Naturally occurring radioactive isotopes such as radium and radon as well as byproduct, source, and special nuclear material or contaminated materials capable of emitting corpuscular or electromagnetic radiations. Included are radioisotopes permanently incorporated into adopted or experimental items of equipment.

h. Sealed source. Any radioactive material this is inclosed in, and is to be used in, a container

in a manner intended to prevent leakage of the radioactive material or any of its daughter products.

i. Licensed material. Source, special nuclear or byproduct material received, possessed, used or transferred under a general or specific license issued by the U.S. Atomic Energy Commission.

j. Authorized material. Radiation sources not requiring a specific or general license issued by the U.S. Atomic Energy Commission. Receipt, possession, use or transfer, except for human use, requires a specific Department of Army authorization or permit.

k. Human use. The internal or external administration of radioactive material (byproduct material or otherwise) or the radiation therefrom, to human beings.

l. Research and development. Includes theoretical analysis, exploration, or experimentation, or the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental or demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes, but not including the internal or external administration of radioactive material or the radiation therefrom to human beings for diagnostic or therapeutic purposes.

m. Lifetime control. Covers the entire period that a licensed or authorized radioactive material is in the possession of a Department of the Army installation or activity regardless of location. This period so far as the Department of the Army is concerned is terminated only upon proper disposal or transfer outside of Department of Army jurisdiction. Control means that those individuals responsible for the use of radioactive materials know how much of the material is on hand (in terms of procurement activity for sealed sources and actual activity for unsealed sources), know where it is located, and are following prescribed safety, health, storage, and disposal standards. Lifetime control covers items which have individual accountability as well as those items which are expendable.

4. Responsibilities. *a.* The Deputy Chief of Staff for Logistics is responsible for—

- (1) Army approval of all applications for Atomic Energy Commission Licenses, except those for human use, Civil Works Programs, and Civil Defense Elements.

- (2) Approval of request for the possession and use of accelerator produced and naturally occurring radioactive materials not under license control of the Atomic Energy Commission, **except** those for human use, Civil Works Programs, and Civil Defense Elements.
- (3) Approval of request for the possession and use of radioactive materials outside the United States, its territories and possessions.
- (4) Staff coordination over logistical implications which pertain to storage, accountability, classification, and disposal of items having Army-wide distribution.

b. All Federal and non-Federal agencies including civilian contractors performing work with radioactive materials on land subject to exclusive Department of Army jurisdiction must obtain, in addition to an Atomic Energy Commission License, a Department of Army approval from the Deputy Chief of Staff for Logistics, ATTN: Chief, PEMA Execution Division, Department of Army, Washington, D.C., 20310, prior to start of such work. A copy of license application must be furnished at the time request for approval is submitted.

c. The Surgeon General is responsible for staff supervision of the radioisotope license program for human use and Army approval of licenses pertaining to human use of radioactive material (see AR 40-37). The Surgeon General is further responsible for evaluation of health physics aspects associated with the use of the radioactive materials or their emanations. The Surgeon General also has command jurisdiction over the U.S. Army Environmental Hygiene Agency. One of the missions of this agency is to provide radiological hygiene surveys and investigations, supplementing those available at the local installation or activity or at higher levels (see AR 40-4 and AR 40-5). These onsite surveys will be made upon request of the commander and will also be conducted periodically (at least once every 3 years) to comply with the Surgeon General's responsibility for surveillance of organizations holding Atomic Energy Commission licenses or Department of Army authorizations or permits.

d. The commander of the installation or activity making application for a license will conduct

a technical and administrative review of each application and planned use of the radioactive material to assure the completeness and adequacy of the application in accordance with current requirements of the Atomic Energy Commission, Title 10, Code of Federal Regulations, Parts 2, 20, 30, 31, 32, 33, 34, 36, 40, 70, and 71, and Army regulations. License applications should be forwarded through command channels to arrive at Deputy Chief of Staff for Logistics, ATTN: PEMA Execution Division, Department of Army, Washington, D.C., 20310, at least 60 days prior to the time of expected use. The Atomic Energy Commission desires that the application be in their office at least 30 days prior to the time of expected use. The item cannot be procured until the license is issued. Emergency processing is not deemed desirable or necessary and normally will be limited to unexpected operational requirements. Commanders should consolidate licenses wherever practical.

e. Approved licenses will be forwarded to the applicant through the major commanders having command jurisdiction over the applicant.

f. Direct correspondence or communication with the Atomic Energy Commission may be authorized by major commanders in cases of inquiry initiated by the Atomic Energy Commission and which concern license matters. Three information copies of all correspondence or other communications, including records of significant telephone conversations, with pertinent inclosures, between the applicant and the U.S. Atomic Energy Commission will be forwarded to the Deputy Chief of Staff for Logistics, ATTN: Chief, PEMA Execution Division, Department of Army, Washington, D.C., 20310.

g. *Licenses.* Licensees will be responsible for full compliance with the applicable provisions of the Title 10, Code of Federal Regulations and applicable Army publications.

5. **License applications.** a. The commander or director of each installation and activity, including Hawaii, Alaska, and Canal Zone, requiring the procurement, use, or storage of quantities of Atomic Energy Commission byproduct, source, or special nuclear material will obtain a license from the Atomic Energy Commission through command channels. Oversea commanders (except in Hawaii, Alaska, and Panama Canal Zone) will

obtain a Department of Army authorization by submitting the same information and in the same format as required from CONUS license applicants. The provisions of each license or authorization must be scrupulously followed since violation risks revocation of the right of possession and use.

b. Procurement of application forms and regulations of the Atomic Energy Commission pertaining to the use and licensing of byproduct, source, and special nuclear materials may be obtained upon direct request to the U.S. Atomic Energy Commission, Division of Materials Licensing, Washington, D.C., 20545.

c. Applications for byproduct material (except human use) source material, and special nuclear material licenses will be submitted through major commanders having command jurisdiction over the applicant to the Deputy Chief of Staff for Logistics, ATTN: Chief, PEMA Execution Division, Department of the Army, Washington, D.C., 20310. The Deputy Chief of Staff for Logistics requires six signed and dated copies of each application. Application for byproduct material licenses (human use) will be submitted to The Surgeon General in accordance with AR 40-37.

d. Major field commanders will be responsible for insuring that commanders of installations and activities under their jurisdiction are provided with proper authorization and with adequate means to safely handle radioactive materials. Any items produced for general or specific distribution will be controlled to the extent that a lifetime control of the radioactive material will be maintained. Excluded are items not exceeding the provisions of Atomic Energy Commission Schedules A and B, Title 10, Code of Federal Regulations, Sections 31.4 and 31.100, those which contain less than one microcurie of radium or its daughter products, or those items exempted by terms of the license or by written approval of the Deputy Chief of Staff for Logistics and/or the Atomic Energy Commission. Even though an item may be excluded because one unit of that item contains a low level of radiation, it must be recognized that bulk storage of such items can produce radiological hazards. These hazards must be brought to the attention of the local Radiological Protection Officer so that safety

standards for storage and handling can be observed. Such bulk storage will be contained within suitably shielded and marked containers which must be individually locked or stored in a locked vault, room, or the equivalent.

e. Installation and activity commanders having radioactive materials will be responsible for insuring their safe use, handling, storage, marking, and disposal and for the enforcement of measures prescribed by the Atomic Energy Commission and the Department of the Army. Nothing in this regulation will be interpreted as negating or superseding any Atomic Energy Commission requirement pertaining to the control of radioactive materials and safeguards pertaining thereto. The commander is also responsible for designating a Radiological Protection Officer to provide consultation and advice on the extent of hazards associated with the use of these sources and the effectiveness of the measures proposed by users to control these hazards. See AR 40-14.

6. Atomic Energy Commission—specific licenses. *a. General.* Specific licenses are issued to an installation or activity commander who has made application and has met the requirements of Title 10, Code of Federal Regulations, Parts 30, 32, 33, 34, 36, 40, and 70, as appropriate and pertinent Army regulations.

b. License for byproduct material. Application for a specific license for byproduct material will be made on applicable AEC Form 313 (Application for Byproduct Material License). Application for use of sealed sources in radiography will be submitted on AEC Form 313R.

c. License for source materials. Application for a specific license for source materials will be submitted on AEC Form 2 (Application for Source Material License).

d. License for special nuclear material. Special nuclear materials applications will be submitted by letter in accordance with the requirements of the Atomic Energy Commission contained in Title 10, Code of Federal Regulations, Part 70.

e. Requirements and limitations. General requirements and limitations affecting the granting of Specific Licenses are published in Title 10, Code of Federal Regulations, and commanders making application for radioactive materials must be familiar with the provisions of this document.

f. Placing purchase orders. To obtain byprod-

uct materials or service irradiations from a facility of the Atomic Energy Commission it is necessary to submit AEC Form 375 (U.S. AEC Isotope order blank) to the facility from which the material or service is requested. This form is not used when purchasing from a commercial supplier.

7. License amendments. Applications for amendments to an existing license will be processed in the same manner as the original application (para 5 and 6). Amendments should be forwarded through command channels to arrive at Deputy Chief of Staff for Logistics, ATTN: PEMA Execution Division, Department of Army, Washington, D.C., 20310, at least 60 days prior to the time of expected use or of the expiration of the license. The Atomic Energy Commission desires that the application for amendment be received by them not less than 30 days prior to the time it is required that the amendment go into effect. If this requirement is not met, it is possible that a valid license covering the amendment will not be issued until after the desired date.

8. License renewal. Applications for renewal of an existing license will be processed in the same manner as the original application (para 5 and 6). Requests for renewal should be forwarded through command channels to arrive at Deputy Chief of Staff for Logistics, ATTN: PEMA Execution Division, Department of Army, Washington, D.C., 20310, at least 60 days prior to the expiration date of the license. The Atomic Energy Commission desires that the renewal be received by them not less than 30 days before the license is due to expire. If this requirement is met, then the program or activity is considered covered by the prior license even though the renewal is not acted on prior to the expiration date. If the requirement is not met, and the renewal is not acted upon prior to the expiration date, then all operations involving the radioactive isotope must be suspended at the expiration date since no valid license exists. Should it appear that renewal cannot be submitted in time for processing, Deputy Chief of Staff for Logistics, ATTN: PEMA Execution Division, Department of Army, Washington, D.C., 20310, will be contacted by electrical means to that effect with a request that a storage license be requested of the Atomic Energy Commission pending approval of the renewal application.

9. Department of Army authorization. a. Re-

quest for Department of Army authorization to use accelerator produced radioactive materials and natural items such as radium materials and radioisotopes which are not under specific license control of the Atomic Energy Commission and are of an activity of one microcurie or greater and for the possession and use of radioactive materials outside the United States, its territories and possessions, will be forwarded by letter in triplicate, through major commanders having jurisdiction over the applicant to the Deputy Chief of Staff for Logistics, ATTN: Chief, PEMA Execution Division, Department of the Army, Washington, D.C., 20310, prior to procurement and use. Requests for authorization of this class of isotopes for human use will be forwarded through channels to The Surgeon General, ATTN: MEDPS-P.

b. Requests will describe the facilities to be used; the type and activity of the radioactive material requested; the name and qualifications of the individual responsible for their direct use and/or application; the purpose for which the isotopes are to be used; and the detection instrument, health protection measures, and monitoring provisions to be employed.

c. Authorizations are usually granted for a 3-year period. Renewals or amendments of an authorization will be requested in the same manner as for the original authorization (a above). Requests for renewal should be submitted at least 30 days prior to the expiration date of the authorization. A request for an amendment can be submitted at any time, except that when it coincides with renewal, the renewal leadtime requirement is in effect.

10. Transfer. Transfer of byproduct, source, or special nuclear materials will not be made except in accordance with Title 10, Code of Federal Regulations, Sections 30.34, 40.51, 70.42 and 70.54. Diversion of radioactive materials, not described in the approved request, will not be made without approval of the Atomic Energy Commission. Requests for such approval will be submitted through the channels prescribed for initial license applications. For those items which contain an activity of one microcurie or greater and which are not under the jurisdiction of the Atomic Energy Commission application for approval for transfer or diversion, will be made through channels previously described to the Deputy Chief of

Staff for Logistics, ATTN: Chief, PEMA Execution Division, Department of Army, Washington, D.C., 20310.

11. New uses or modifications. Plans and specifications for incorporating radioactive material into new items of issue, or for modifications of existing items of issue, will be submitted to the Deputy Chief of Staff for Logistics, ATTN: Chief, PEMA Execution Division, Department of Army, Washington, D.C., 20310, for review of possible health hazards and logistical implications before the item is type classified. Electron tubes containing less than one microcurie of radioactivity are excluded from this requirement. Plans and specifications will be accompanied by the following data:

a. Analysis and/or tests conducted to insure that lifetime control for the radioactive material is adequate. Use factors and environment will be considered in the analysis and tests.

b. A copy of the contractor or Government general and/or specific Atomic Energy Commission license (only for sources licensed and controlled by the Atomic Energy Commission). The contractor or Government agency will also include all the test data submitted to the Atomic Energy Commission in obtaining the license.

c. Type of radioactive materials and activity of finished item.

d. Procedural controls to be published in literature available to the user if the activity is greater than one microcurie. This includes items in Schedules A and B, Title 10, Code of Federal Regulations if the activity is one microcurie or greater.

e. Marking and packaging data as required by MIL-M-19590, MIL-STD-120, MIL-E-1E, ICC Regulations and AR 755-380.

f. Quantities of Materials that may be stored in the normal shipping container(s) without exceeding the 2 mr./hr level specified for unrestricted areas in Title 10, Part 20, of the Code of Federal Regulations and AR 40-37. Research and Development items intended for general or specific distribution must be approved by Deputy Chief of Staff for Logistics prior to shipment to an Army activity if the item contains one or more microcuries of radioactive material.

12. Disposal. Commanders are responsible for disposition of radioactive materials in accordance with provisions of AR 755-380.

13. Technical advice. *a.* Technical advice concerning the health hazards relative to safe handling and storage of equipment containing radioactive materials is a staff responsibility of The Surgeon General and will be furnished upon request through command channels, or direct in cases of emergency requiring expeditious action by The Surgeon General. Technical advice to aid individual users or commanders regarding the elimination of possible health hazards and/or the incorporation of health protective measures within the design and construction of facilities, in which radioactive materials are to be used will also be furnished upon request.

b. Technical advice and guidance for the safe movement and transportation of nuclear and radioactive materials is a staff responsibility of the Deputy Chief of Staff for Logistics, and will be furnished upon request through command channels, or direct in cases of emergency requiring expeditious action by the Deputy Chief of Staff for Logistics, ATTN: Director of Transportation, Department of Army, Washington, D.C., 20310. Transporting radioactive materials from storage site to operational site will be made in accordance with the rules and regulations of Federal, State, and local governments where applicable.

14. Surveys. The Surgeon General will provide personnel to perform onsite surveys and provide recommendations to meet the requirements of this regulation as well as those of the Atomic Energy Commission. In addition, each organization holding or using radioactive materials under Atomic Energy Commission or Department of Army authorization will be subject to a periodic onsite survey at least once every 3 years, under The Surgeon General's surveillance program. The U.S. Army Environmental Hygiene Agency, Edgewood Arsenal, Md., provides consultation service in accordance with provisions of AR 40-4. Major commanders may authorize direct communication with that agency for the purpose of determining the adequacy of health considerations as they pertain to qualifications of personnel and appropriateness of equipment, facilities, and procedures.

15. Inventory of radiation sources. *a.* The commander of each installation and activity will designate an individual, preferably the Radiological Protection Officer, to maintain a current inventory of radioactive materials and will physically

inventory all radioactive materials that are covered by an Atomic Energy Commission license or Department of Army authorization at least once every 6 months. Inventory records will document the specific item of equipment and/or radioisotope, the location of the item, level of activity, applicable Atomic Energy Commission or Department of Army authorization number, expiration date, receipts, transfers, and local disposals, date of last physical inventory and name of inventory officer. Any radioactive material in-

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By Order of the Secretary of the Army:

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army: To be distributed in accordance with DA Form 12-9 requirements for Logistics General-D.
NG: None.
USAR: None.

incorporated in the end item that is covered by a Department of Army authorization is exempt from inclusion in this specific inventory, unless otherwise directed by the Deputy Chief of Staff for Logistics. The inventory will be the subject of periodic command and Inspector General inspections.

16. Radiation protection. AR 40-14 and the AR 385-series prescribes standards, responsibilities, and procedures for recording and minimizing ionizing radiation exposure.

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.