

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Materials Branch, Directorate of Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20, and the license fee provisions of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 16 and the appropriate fee enclosed. (See Note in Instruction Sheet).

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital person, etc. Include ZIP Code and telephone number.) National Aeronautics and Space Administration John F. Kennedy Space Center, NASA Kennedy Space Center, Florida 32899		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a). Include ZIP Code.) 1. Kennedy Space Center 30-14904 Merritt Island, FL 32899 2. Cape Canaveral Air Force Station, FL 32925 3. Other temporary job sites of Licensee See Supplement to Item 1.(b).	
2. DEPARTMENT TO USE BYPRODUCT MATERIAL NASA/Kennedy Space Center		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) 09-11149-02 To be replaced in its entirety by the license applied for herein.	
4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.) Radioactive materials are to be used by individuals approved and designated by the NASA/KSC Radiation Protection Committee. Chairman: G. Wyckliffe Hoffler, M.D. See Supplement to Items 8 and 9.		5. RADIATION PROTECTION OFFICER. (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.) 03610 Perry H. Williams FIS-823-3152 Bob Martin 824-9917 PPS See Supplement to Items 8 and 9.	
6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.) See Supplement to Items 6.(a) and (b).		(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)	
7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.) See Supplement to Item 7.			

8509130170 850829
REG2 LIC30
09-11149-03 PDR

97374

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection			Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	See Supplement to Item 8.		Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No
d. Biological effects of radiation			Yes No	Yes No

9. EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
		See Supplement to Item 9.		

10. RADIATION DETECTION INSTRUMENTS (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)
See Supplement to Item 10.					

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

See Supplement to Item 11.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

See Supplement to Item 12.

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes ☒ No ☐ See Supplement to Item 13.

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source. See Supplement to Item 14.

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved. See Supplement to Item 15.

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

NASA

John F. Kennedy Space Center, FL

Applicant named in item 1

By: H. Wyckliffe Hoefler, M.D. 17 Nov 78

License Fee Category \$ _____

Fee Enclosed \$ _____

Date November 17, 1978

Title of certifying official _____

WARNING.—18 U. S. C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
NASA AERONAUTICS AND SPACE ADMINISTRATION

SUPPLEMENT TO ITEM 1.(b)

Permanent NASA Kennedy Space Center, (KSC) facilities are located on Merritt Island, Florida, and adjacent Cape Canaveral Air Force Station (CCAFS). KSC activities may, at times, extend to other temporary job sites. KSC radiological activities at temporary job sites shall adhere to the KSC Radiation Protection Program requirements as well as local jurisdictional requirements.

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SUPPLEMENT TO ITEM 4

Radiation Protection Committee Members

Chairman G. Wyckliffe Hoffler, M.D.

Co-Chairman George Kontra

Radiation
Protection Officer Perry H. Williams

Emergency
Preparedness Officer William C. Willmot

Members:

Kenneth C. Steel

Mark R. Schlomer

David E. Dunsmoor

Richard N. Young

Frank W. Horn, Jr.

Howard F. Blackwood, Jr.

Hans W. Rudolph

John W. Larson

See Supplement to Items 8 and 9 for Radiation Training and
Experience Summaries.

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
NASA AERONAUTICS AND SPACE ADMINISTRATION

SUPPLEMENT TO ITEMS 6.(a) AND (b)

- | | |
|--|--|
| 1. Atomic Numbers 1 through 83 inclusive | Any form not to exceed 10 millicuries per radionuclide and 1 curie total |
| 2. Atomic Numbers 1 through 84 inclusive
plus Americium-241
and Curium-244 | Sealed or plated sources and foils - 150 curies total, not to exceed 100 millicuries per source except:

Cobalt-60 Not to exceed
Cesium-137 10 curies per
Hydrogen-3 sealed source

Promethium-147 Not to exceed
Polonium-210 1 curie per
source

Krypton-85 Not to exceed
5 curies per
source |
| 3. Californium-252 | Sealed sources - 11 curies total, not to exceed 11 curies per source |
| 4. Uranium (All) | Plated sources, foils, solid 1 millicurie total, not to exceed 100 microcuries per source except depleted uranium 2100 kg. |
| 5. Thorium (All) | Any form - 1 millicurie, not to exceed 100 microcuries per source |
| 6. Plutonium-239 | Plated sources or foils; each source not to exceed 0.00017 grams, total not to exceed 0.0017 grams |
| 7. Plutonium-238 | Plated sources or foils; each source not to exceed 6.0×10^{-7} grams, total not to exceed 6.0×10^{-6} grams |

SUPPLEMENT TO ITEMS 6.(a) AND (b) (CONTINUED)

8. Plutonium-238

Plutonium-Beryllium sealed sources; each source not to exceed 0.6 gram, total not to exceed 1.2 grams

9. Atomic Numbers 1 through 84 inclusive
plus Americium-241
and Curium-244

Any form - 250 curies total

Combine with 2

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
NASA AERONAUTICS AND SPACE ADMINISTRATION

SUPPLEMENT TO ITEM 7

Use of Radioactive Material

6.a. (1, 2, 3, 4, 5) - Research and development, calibration, luminescence, static eliminating, and temporary storage.

6.a. (6, 7, 8) - Calibration, collection, temporary storage

6.a. (9) - Temporary storage

NOTE: This is intended to accommodate items such as transferred sources or payloads, impounded sources, and waste.

The following additional authorizations are also requested:

1. Any radioactive material under this license which is incorporated into spacecraft may be launched in accordance with the "Nuclear Safety Review and Approval Procedures for Minor Radioactive Sources in Space Operations," approved by the Executive Office of the President through the National Aeronautics and Space Council, 16 June 1970 (see attachment to this supplement).
2. Any source stored as waste is exempt from periodic leak tests.
3. The requirements of periodic leak test do not apply to sealed sources installed and maintained in readiness in space flight hardware (or backup hardware) prior to launch.

NOTE: Radioactive material under this license will not be used on or in human beings.

NOTE: This application does not request authorization to perform gamma ray radiography. Onsite nondestruct testing facilities and sources are owned by and stored at NASA/KSC; however, the utilizing contractors are required to maintain their own licenses to perform radiography.

KSC is primarily an integration and launch facility for spacecraft, payloads, and vehicles that are manufactured by various contractors and experimenters offsite. The upcoming Space Transportation System (STS) (Space Shuttle) is capable of simultaneously placing many hundreds of experimental packages into space. The broad scope of this license is intended to provide the option to consolidate control of tenant and visitor (experimenter payload) sources at KSC which was not possible under NRC License 09-11149-02.

SUPPLEMENT TO ITEM 7 (CONTINUED)

In addition to sources which may be part of flight hardware or ground sources required for calibration/checkout of flight hardware, the current use and inventory of 09-11149-02 will be incorporated into this license. Additional tenant use of sources is expected as programmatic needs evolve and are identified. Some sources which are presently owned by NASA/KSC but licensed/used by contractor tenants for facility support may be brought under this license.