FORM NRC-313 I (3-80) 10 CFR 30 — U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

1. APPLICATION FOR: *(Check and/or complete as appropriate)*

License for laboratory use

X	a. NEW LICENSE
	b. AMENDMENT TO: LICENSE NUMBER
	c. RENEWAL OF: LICENSE NUMBER

2. APPLICANT'S NAME *(Institution, firm, person, etc.)*

New England Division Corps of Engineers DA
424 Trapelo Road, Waltham, Massachusetts

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
617-6478356

3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

W.M.Hoxie, Chief Safety Office NED Radiol Prot Off

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
6176478356

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)

Corps of Engineers U.S.Army
Safety Office, New England Division
424 Trapelo Road, Waltham, Massachusetts
02254249

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*

Water Quality Laboratory NED
Barre Falls Dam RFD #1
Hubbardston 01452 9713 Massachusetts

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL
(See Items 16 and 17 for required training and experience of each individual named below)

	FULL NAME	TITLE
a.	Brian J. Condike, Chemist	Chemist
b.	Robert X. Brazeau, Chief Water Quality Laboratory	Chief Water Quality Laboratory
c.		

7. RADIATION PROTECTION OFFICER

Wilbar M. Hoxie, P.E. Chief Safety Office

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

LINE NO.	A ELEMENT AND MASS NUMBER	B CHEMICAL AND/OR PHYSICAL FORM	C NAME OF MANUFACTURER AND MODEL NUMBER *(If Sealed Source)*	D MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
(1)	Nickel 63	Foil	Packard Gas Chromato-	1 Sealed foil
(2)			graph Model 902 mfd by New England	@ 5 millicuries
(3)			Nuclear NER 004 9-12 millicuries.	
(4)				

DESCRIBE USE OF LICENSED MATERIAL
E

(1) Testing of samples by Gas Chromatograph Electron Capture Detector.

(2)

(3)

(4)

8701140578 870106
REG1 LIC30
20-01366-03 PDR

FEE EXEMPT

FORM NRC-313 I (3-80)

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Packard Instrument Co. Gas Chromatograph	Packard Instrument Co.	Model 902
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	Detector	Victoreen	Model 1	1 Ea	Alpha, Beta	100
(2)	Detector	Victoreen	Model 1B	1 Ea	Beta, Gamma	100
(3)	Detector	Victoreen	Model 6B	1 Ea	Beta, Gamma	0.01
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☒ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

Annual calibration
Massachusetts Civil Defense, Ft Devens, Massachusetts

☐ b. CALIBRATED BY APPLICANT

Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE		☐ MONTHLY
☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD)		☐ QUARTERLY
☐ (3) OTHER (Specify): _____		☐ OTHER (Specify):
_____		_____
_____		_____

13. FACILITIES AND EQUIPMENT (Check were appropriate and attach annotated sketch(es) and description(s).

☒ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (fnclude filtration, if any), ETC. New fume hoods
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC Contained in instrument
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. Long tongs available
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC. Face masks, Nucl. cartridge, rubber gloves

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

Not disposed.

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

Sealed source returned to manufacturer for replacement.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(if needed)*, day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.

16. FORMAL TRAINING IN RADIATION SAFETY. Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

    a. Principles and practices of radiation protection.

    b. Radioactivity measurement standardization and monitoring techniques and instruments.

    c. Mathematics and calculations basic to the use and measurement of radioactivity.

    d. Biological effects of radiation.

17. EXPERIENCE. Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, 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.

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.

a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)*	b. CERTIFYING OFFICIAL *(Signature)* Wilbar M Hoxie
	c. NAME *(Type or print)* WILBAR M. HOXIE, P.E.
(1) LICENSE FEE CATEGORY:	d. TITLE Chief Safety Office, Radiological Safety Officer
(2) LICENSE FEE ENCLOSED: $	e. DATE November 18, 1986

FORM NRC-313 I (3-80)

Application for NRC License

Ni^{63} Sealed foil

Water Quality Laboratory
New England Division Corps of Engineers
424 Trapelo Road, Waltham, Massachusetts

Attachment
No. 15 Radiation Protection Program

In following the Radiation Protection Program of the Corps of Engineers ER 385-1-80, the Chief Safety Office is assigned responsibility for completion of compliance with NRC, OSHA and Corps of Engineers requirements for preventing exposure of persons to sources and equipment emitting nuclear radiation. Control measures are exclusion of persons not conducting tests from vicinity of source, maintaining sealed source without open exposure in the laboratory, fume and exhaust duct to prevent escape of radiation, marking of radiation area, and instructions for all laboratory personnel in effects, controls, and compliance with protection. Wipe test is made annually or when sealed source is exchanged with the manufacturer. Procedure is to wipe exterior of sealed source with clean cellulose carried to the Radiological Safety Laboratory at the US Army Materials Laboratory, Watertown, Massachusetts for testing by Industrial Hygienist with scintillation counter. Results are matched with count rates of known activities and reported in microcuries. Limit is 7×10^{-6} microcuries. Reference Title 10 CFR Part 31. Searle Model 1152.

Operation of sealed source in instrument is limited to Laboratory Chemist or to chemist under his direct supervision. NRC Form 3 is posted in Laboratory.

No. 16 Training in Radiation Safety

W.M.HOXIE, Chief Safety Office and RPO was trained in USA Chemical Corps School in radiation effects and safety; additional training in effects, radiation protection, monitoring, biological effects in USA Environmental Hygiene Course at Edgewood Arsenal, Maryland and in radiation protection at Worcester. He has served as Instructor in Weapons Effects, radiation effects, and protection in USA Command & General Staff College courses for Artillery and Medical Officers.

Mr. Robert Y. Brazeau completed formal studies covering four areas of radiation safety (-protection, monitoring, mathematics and biological effects) CBR School Fort Knox, Kentucky 2 weeks
OCD Eastern Training Centre, Sheepshead Bay, Long Island, N.Y.
Certificate No.01135

Mr. Brian Condike, MS, Chemist, is a graduate chemist with 4 months of specialized training in measurement and standardization instrumentation and techniques at the University of Massachusetts, Amherst, Massachusetts. 24 May 1983 Mr. Condike was designated Alternate RPO for NED.

Application for NRC License

Ni^{63} Sealed foil
New England Division Corps of Engineers
Water Quality Laboratory

Attachment
No. 17 Experience.

W.M.Hoxie, CSP, has performed the assignment of Radiological Protection Officer in addition to construction and occupational safety since 1963, which has included acquisition of licenses, equipment and supervision of radiation monitoring,training, general consultation with laboratories and maintenance of prescribed records. Radiological applications during emergency exercises have been completed in all exercises in which New England Division took part. Occupational health training has been disseminated to all Division personnel and no exposure has been found as radiation sources have been well controlled, from Tritium, Cobalt ^{60} training sources, and Nickel ^{63}.

Mr. Robert X. Brazeau has directed the Water Quality Laboratory using the sealed sources of Co^{60}, Tritium(250 millicuries) and Nickel ^{63} in laboratory testing.

Mr. Brian Condike has been the principal Chemist for the Water Quality Laboratory using gas chromatography for analysis of water samples. Co^{60} was used occasionally in a training mode with sealed sources of training kit, and Tritium (250 millicuries) replaced with a single source of Nickel ^{63} in gas chromatograph, at a level not over 10 microcuries. Mr. Condike has been as meticulous in safe handling of the isotopes as with the toxic materials otherwise used in thousands of sample analyses without radioactive sources.