FORM NRC-313 (1-79)
10 CFR 30

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

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

	a. NEW LICENSE
X	b. AMENDMENT TO LICENSE NUMBER 21-05990-05
	c. RENEWAL OF LICENSE NUMBER

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.

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

Kellogg Company

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
616 - 966-2000

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Arthur D. Oswald

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
616 - 966-2951

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*

235 Porter Street
Battle Creek, MI 49016

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

235 Porter Street
Battle Creek, MI 49016

(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.	Arthur D. Oswald	Senior Systems Engineer
b.	James D. Nelson	General Supervisor Safety & Security
c.	Eugene Irish	Electrical Engineer, Advanced Tech

7. RADIATION PROTECTION OFFICER

Arthur D. Oswald

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)	See Attachment A			
(2)				
(3)				
(4)				

	E DESCRIBE USE OF LICENSED MATERIAL
(1)	See Attachment B
(2)	
(3)	
(4)	

CONTROL NO. 85177

9. STORAGE OF SEALED SOURCES

LINE NO.	A. CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED.	B. NAME OF MANUFACTURER	C. MODEL NUMBER
(1)	See Attachment C		
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	A. TYPE OF INSTRUMENT	B. MANUFACTURER'S NAME	C. MODEL NUMBER	D. NUMBER AVAILABLE	E. RADIATION DETECTED (alpha, beta, gamma, neutron)	F. SENSITIVITY RANGE (milliroentgens/hour or counts/minute)
(1)	Cutie Pie	Nuclear Electronics Corp	740F	1	alpha, beta, gamma	0-25 mr/hr - x1, x10,x100,x1000
(2)	Cutie Pie	Nuclear Electronics Corp	491-30	1	alpha, beta, gamma	0.1-0.3-1-3-10-30-100 mr/hr
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☒ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY
Applied Health Physics
2986 Industrial Boulevard
Bethel Park, PA 15102 Every 6 months

☐ b. CALIBRATED BY APPLICANT

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

12. PERSONNEL MONITORING DEVICES

A. TYPE (Check and/or complete as appropriate.)	B. SUPPLIER (Service Company)	C. EXCHANGE FREQUENCY
☒ (1) FILM BADGE ☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD) ☐ (3) OTHER (Specify): _____	Searle Health Physics Services Unit of Searle Medical Products 2000 Nuclear Drive Des Plaines, Illinois 60018	☒ MONTHLY ☐ QUARTERLY ☐ OTHER (Specify):

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

☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED
Sealed sources and devices will be returned to manufacturer for disposal.

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.

CONTROL NO. 85177

15. SUMMARY OF RADIATION CONTROL

January 4, 1988

Radiological Safety Memo

TO: ALL MECHANICAL SUPERVISION

RE: OHMART ENCLOSURES AND SOURCE SAFETY

Upon completing radiological safety instructions given by Radiological Safety Officer (R.S.O.) all mechanics in the Instrument Repair Department, will be issued a key for the Ohmart locks.

It will be the responsibility of the Instrument Repair Department under the general supervision of the R.S.O. to open and close the Ohmart housings according to the procedures herein outlined.

The mechanic will:

1. Make certain Ohmart sources are locked whenever anyone is working on the housing. This will be done by either transferring the lock from housing to the source or using the lock available in Instrument Repair Shop.

2. If source needs to be removed, the Instrument Repair mechanic will not leave it unattended in the plant. The source should be taken to Instrument Repair Shop or R.S.O. locked file for safe keeping until is is to be reinstalled.

3. If gate on the source will not close the R.S.O. (J. Bruce Bowen), A.R.S.O. (Jim Nelson) or (Eugene Irish) should be notified so appropriate action can be taken. We are not allowed to repair the source.

4. If minor repairs have been made to a housing, the Instrument Repair mechanic should check the radiation level with the CP-2 (Cutie Pie) to be certain the radiation is within allowable limits, before putting back in service. In all cases of repair or moving of any source the R.S.O. must be contacted so a survey can be made and recorded.

5. If in doubt of any procedures, contact the R.S.O.

J. Bruce Bowen, (R.S.O.)
Jim Nelson (A.R.S.O.)

15. SUMMARY OF RADIATION CONTROL

RADIOLOGICAL SAFETY MEMO

REPLACES: January 1980
REVISED: January 15, 1988

Safety precautions to be observed when handling Radioactive Sources in the Battle Creek Plant.

Due to the unusual safety requirements and precautions necessary when handling radioactive sources and other forms of ionizing radiation in the Battle Creek Plant, and, to satisfy precautionary procedures of the Nuclear Regulatory Commission and the Michigan Department of Public Health, the following instructions are necessary:

1. The Instrument Repair Department will install, remove or otherwise handle, transport, or work on radioactive sources in the Battle Creek Plant under the general supervision of the Radiological Safety Office (R.S.O.). Exceptions to the above shall be sources peculiar to laboratory instruments under the supervision of the Quality Control or experimental departments not normally serviced by the IR Department.

   If the configuration of the pipes, ducts, or conveyor containing the nuclear gage is to be changed, modified, removed, or worked on, the gate of this gage shall be shut, locked, and in general treated as if the source itself was to be removed. (See 4 Source Removal below)

2. Anyone is authorized to close the gate on a radioactive source, if deemed necessary due to damage to source holder, pipe, duct, or conveyor. The gate is not locked open. Usually a wing nut is provided so that the gate will not vibrate shut in normal operation. Housing should be checked by I.R. Department or R.S.O. before lock is opened.

3. The following procedure is to be followed for the installation of a radioactive source used in nuclear gages:

   a. Obtain locked source from R.S.O.
   b. Install source in authorized enclosure or on approved frame.
   c. Install appropriate tags in source area.
   d. When installation is complete, call R.S.O. to perform radiological safety survey.
   e. If all precautionary measures have been complied with, the R.S.O. will unlock the source and the gage can be tested and placed in service by the I.R. Department.

4. The following procedure is to be followed in removing a source:

   a. Shut gate on source. This shuts off all potentially harmful radiation. If gate will not close, do not remove source, call R.S.O. or his alternate.
   b. Lock source gate in closed position. Locks for this purpose are in IR Shop.
   c. The source may now be handled safely. Return source to R.S.O. or place in safe place.

15. SUMMARY OF RADIATION CONTROL

SUBJECT: General Kellogg Safety Policy

RE: Nuclear Gauges, Devices, and other forms of ionizing radiation

DATE OR ORIGIN: REPLACES: January 1980
REVISED: January 1988

The purpose of this policy is to acquaint all interested persons with the location and care of radioactive sources and other forms of ionizing radiation.

Data copy and information pertaining to radioisotope sources and other sources of ionizing radiation will be kept in a central file in the R.S.O. office under his supervision. Original records will be retained as desirable by responsible parties. The central file contains a.) unit identity and current location; b.) notice of receiving, location change or final disposal; c.) license data or specifications; d.) operation or maintenance inspection and detail; e.) purchase order, receiving reports and shipping orders; f.) all test records and inspection detail. This type of recorded identity is required to conform with licensing and inspection procedures by the NRC and the Division of Radiological Health, Michigan Department of Public Health. Records of letter a and b (above) are also kept in the Equipment Records office, 2nd floor, #91 Building.

Nuclear gauges and devices are normally located and shielded in such a manner as to eliminate all possible hazards to anyone working within one (1) foot of the device. As further precautionary measure all units will be checked for damage and given a Radiological Survey upon being received in the Plant, at the time of initial installation, and each subsequent installation by the Radiological Safety Officer. For all radioactive sources requiring same, a leak (or wipe) test will be made at intervals specified by current state and federal reulations by the Radiological Safety Officer and certified by a reliable firm authorized to perform such services by the Nuclear Regulatory Commission. All radiological survey instruments will be checked monthly for operation and calibration by the Radiological Safety Officer and certified calibration severy six months by a reliable firm authorized to perform such services by the NRC.

If, for any reason, the source or unit is damaged, or the confiuration of the pipes or ducts to which they are attached is changed, the Plant Radiological Safety Officer shall be notified immediately. The area will be surveyed with a Safety Department Representative, to determine if any radiation level exists in the vicinity of the damaged device or duct. In the case of an explosion or fire affecting the structure of the building or radioactive source holder, the Compliance Office of the Nuclear Regulatory Commission and the Michigan Department of Health must be notified immediately. The area will be roped off until a survey can be made to determine if a dangerous level of radiation exists. The nearest NRC Office is Region III, U.S.N.R.C., 799 Roosevelt Road, Glen Ellyn, IL 60137, Telephone-Daytime-(312) 858-2660; Nights and Holidays - (312) 858-2660. Michigan Department of Health (on duty) (517) 373-1410; (off duty) (417) 373-1360. This report will normally be made by the Plant Radiological Safety Officer or his alternate. If either of these men are not present in the plant at the time, the Safety Department Representative on duty will take the necessary precautions of roping off the area until it can be surveyed by the Plant Radiological Safety Officer of his alternate.

16. FORMAL TRAINING IN RADIATION SAFETY

J. Bruce Bowen - Environmental Programs Coordinator B.S.-Liberal Arts (Juniata College), B.S.-Chemical Engineering (University of Wisconsin), M.S.-Limnology (Wayne State University). 5 years experience in Management Consulting for Chemical Manufacturing Industry (Hercules, Inc.). 2 1/2 years experience in Environmental Affairs, including regulatory agency liaisons and compliance, daily operations and maintance of environmental programs, and implementation of employee safety programs. Ohmart Radiation Safety School, September 1987. Worked with former Radiation Safety Office (on the job training) from July 1987 to December 1987 performing RSO functions described in attachments.

James D. Nelson - General Supervisor Safety and Security. Business and general courses at Michian State University and Kellogg Community College equivalent to Associate Degree. 13 years experience in safety and security including inspection, administration and supervision. 8 years in personnel selection and placement including testing, rating and placement of personnel in electrical and electronics fields. 5 years experience in sanitation supervision. Many short term management, safety, fire fighting and security courses. Formal training in radiation safety - Ohmart Radiation Safety School, February 5 and 6, 1980, Kay Ray, Inc., Installation and Nuclear Radiation Safety Course, February 18 through 22, 1980. Courses included: Basic Principles of Nuclear Physics, Detection of Radiation, Principles of Nuclear Gauging, Dosimetry, Personnel Monitoring, Radiation Safety, NRC Regulations, Pocedure for Handlers and Wipe Testing, Miscellaneous Safety Aids and Information plus Hands-On-Training.

Eugene Irish - Electrical Engineer, Advanced Technology, B.S., Electrical Engineering (Northwestern University. 21 years experience in Electrical/Instrumentation Engineering. Formal training in Radiation Safety - Ohmart Radiation Safety School, February 1962 and November 1976. Course included: Basic Principles of Nuclear Physics, Detection of Radiation, Principles of Nuclear Gauging, Dosimetry, Personnel Monitoring, Radiation Safety, NRC Regulations and Procedure for Handlers and Wipe Testing.

17. EXPERIENCE

J. Bruce Bowen	-	Radiation Experience: 6 Months on the job training with former Radiation Safety Officer.
James D. Nelson	-	Radiation Experience: None
Eugene Irish	-	20 Years Experience in Nuclear Gauging Technology

CERTIFICATE OF PROFICIENCY

THIS IS TO CERTIFY THAT

J. BRUCE BOWEN

HAS SUCCESSFULLY COMPLETED AN OHMART TRAINING COURSE INCLUDING: PRINCIPLES AND PRACTICES OF RADIATION PROTECTION, RADIOACTIVITY MEASUREMENT AND MONITORING, MATHEMATICS AND CALCULATIONS, BIOLOGICAL EFFECTS OF RADIATION, COMMON U.S.N.R.C. REGULATIONS, WASTE DISPOSAL AND EMERGENCY PROCEDURES.

ohmart technical™ TRAINING SCHOOLS

TRAINING DIRECTOR

Date: 8-12-87

CONTROL NO. 851177