

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

U.S. NUCLEAR REGULATORY COMMISSION

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

APPLICATION FOR BYPRODUCT MATERIAL LICENSE  
INDUSTRIAL

030-17343

a. NEW LICENSE

b. AMENDMENT TO:  
LICENSE NUMBER  
X 34-18906-01

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.)

Ohio Lime Company

TELEPHONE NUMBER: AREA CODE -- NUMBER EXTENSION  
419/849-2321

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Terence D. Holland

TELEPHONE NUMBER: AREA CODE -- NUMBER EXTENSION  
419/849-2321 Ext 212

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

128 East Main Street  
Woodville, OH 43469

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

County Road 32  
Woodville, OH 43469

(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. Terence D. Holland

Kiln Manager

b. Ray A. Kohlenberg, Jr.

Asst. Kiln Manager

c. Steven A. Culbertson

Works Chemist

7. RADIATION PROTECTION OFFICER

Steven A. Culbertson

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

L I N E  NO.	ELEMENT AND MASS NUMBER  A	CHEMICAL AND/OR PHYSICAL FORM  B	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source)  C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME  D
(1)	Ca 137	Sealed Source	Texas Nuclear Mod # 570-57157C	2X 500 MC
(2)				334
(3)				440 (SL)
(4)				Amendment 1/12/81

DESCRIBE USE OF LICENSED MATERIAL  
E

- (1) The unit will automatically control the product in a Neims  
(2) direct lime cooler on our Rotary lime kiln.

(3)

(4)

Control No. 04269

DEC 19 1980

### 9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED.	NAME OF MANUFACTURER	MODEL NUMBER
	A.	B.	C.
(1)	Texas Nuclear Source Holder 2 EA.	Texas Nuclear	5193
(2)			
(3)			
(4)			

### 10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT	MANUFACTURER'S NAME	MODEL NUMBER	NUMBER AVAILABLE	RADIATION DETECTED (alpha, beta, gamma, neutron)	SENSITIVITY RANGE (milliroentgens/hour or counts/minute)
	A	B	C	D	E	F
(1)	The source holder is a complete storage container for the source					
(2)	both prior and subsequent to installation of the gauge.					
(3)						
(4)						

### 11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

None required

☐ 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
<input type="checkbox"/> (1) FILM BADGE  <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)  <input type="checkbox"/> (3) OTHER (Specify): _____ _____ _____	No radiation detection instrumentation is necessary to safely process and utilize these devices.	<input type="checkbox"/> MONTHLY  <input type="checkbox"/> QUARTERLY  <input type="checkbox"/> OTHER (Specify): _____ _____ _____

### 13. FACILITIES AND EQUIPMENT (Check where 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

Will be returned to the 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.

# 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. 769: 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) <i>T.D. Holland</i>
(1) LICENSE FEE CATEGORY: <i>Amendment</i>	c. NAME (Type or print) <i>T. HOLLAND</i>
(2) LICENSE FEE ENCLOSED: \$ <i>40 —</i>	d. TITLE <i>KILN MGR.</i>
	e. DATE <i>Dec. 16th. 1980</i>



**OHIO LIME COMPANY** • WOODVILLE, OHIO 43469 • 419-849-2321

A Subsidiary of Steetley Industries Limited



ITEM 6

Mr. Holland has, for several years, been responsible at our site location in Dundas, Ontario for four (4) of these units operating on our Neims - contact coolers. His training in Physics included a three year study of Radioactivity measurement and monitoring technique and instruments at Worksop Technical College in Nottinghamshire, England.

Steves' training occurred in Introductory Physics, a one year course at Heidelberg College, Tiffin, Ohio.. Additional instruction was received in Instrumental Chemistry, offered by the same institution during a six month period.

In regard to the instrumentation measurement of radiation, training was received in the above mentioned courses.

Finally, mathematical training relevant to radiation calculations came from courses in calculus, computer science, and advanced physical chemistry during a 4 year period at Heidelberg.

Mr. Kohlenberg studied Chemistry and Physics at Bowling Green State University, Bowling Green, Ohio which included some instruction in radiation measurement instrumentation.



**OHIO<sup>®</sup> LIME COMPANY** • WOODVILLE, OHIO 43469 • 419-849-2321

A Subsidiary of Steel Industries Limited



#### PERSONNEL MONITORING

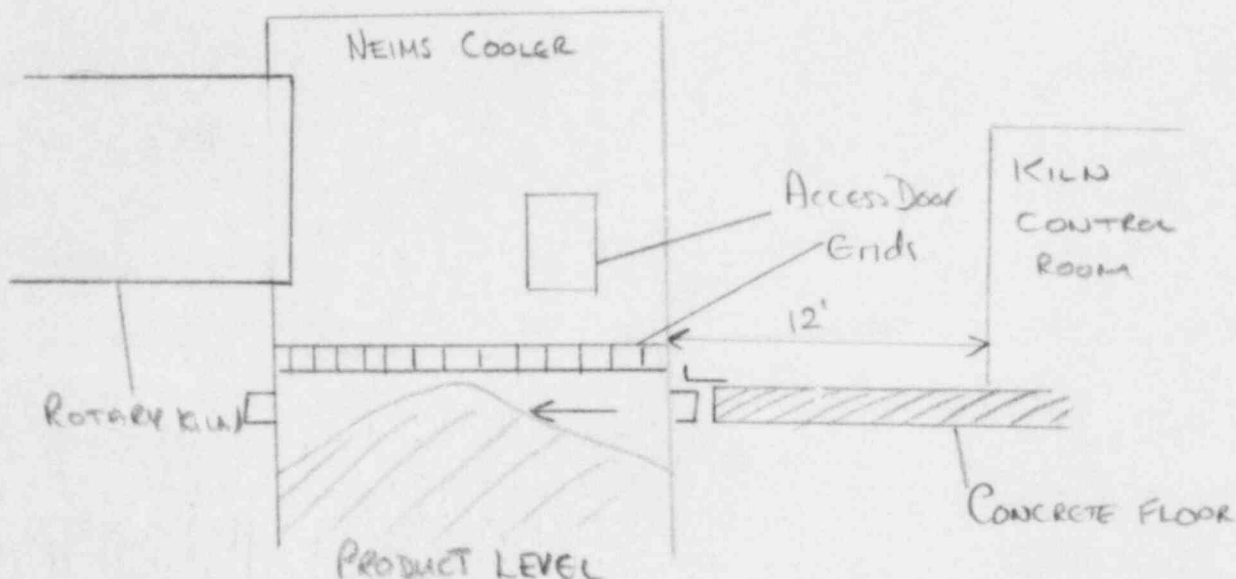
No additional personnel monitoring devices need be utilized due to the presence of these gauging devices. The source holder(s) are designed such that radiation levels will be less than 5 mR/h one foot from any accessible surface at the maximum source loading for the device with the device in the OFF position. With the shutter(s) open, a collimated beam of radiation exists between the source head and detector traversing the vessel being monitored. It is not likely, when consideration is given to the design of the device, the precautions to be taken itemized below and the minimal accessibility, that any individual will receive a radiation exposure in excess of 0.125 rem per calendar quarter.

PLANT



OHIO<sup>®</sup> LIME COMPANY • WOODVILLE, OHIO 43469 • 419-849-2321

A Subsidiary of Steetley Industries Limited



#### FACILITY

The unit will automatically control the level in a new contact lime cooler installation: There is no severe environmental conditions that can affect the integrity of the source and shielding. All environmental factors have been presented to the manufacturer for evaluation prior to specifying these devices.

The beam direction will be away from the most likely personnel area.

Access into the beam will not be possible under any circumstances when the kiln is operating and even when the kiln is shutdown considerable mechanical work is required to enter the base of the cooler.



**OHIO LIME COMPANY** • WOODVILLE, OHIO 43469 • 419-849-2321

A Subsidiary of Steetley Industries Limited



### RADIATION PROTECTION

Based upon working conditions and physical accessibility, we estimate that 8 persons would routinely be within three feet of any of these devices  $\frac{1}{2}$  hours per week.

Our personnel will be instructed as to the size and location of the beam, the radiation levels in the beam and will be cautioned that unless the shutter is CLOSED these radiation levels are significant. These devices have the capability of producing high level radiation between the source holder and the detector. However, the combination of:

- i. during normal operation no individual has access to the vessel. The contained material and operating parameters preclude the access of any major portion of the body to the radiation field. Only authorized personnel are allowed to change the operating parameters and/or authorized access;
  - ii. personnel are instructed to CLOSE the gauge shutter when the operation is stopped and/or work must be done in any vessel being monitored;
  - iii. if the operation is to be shut down for any extended period of time or extensive work is to be done on the vessel, the radiation safety officer will be notified to insure that the shutter is locked in the CLOSED position and remains locked during this period of time;
  - iv. signs displaying "Caution Radiation" and the standard symbol stating that the shutter must be CLOSED and the radiation safety officer notified prior to entering the vessel being monitored will be posted at installation;
  - v. the general inaccessibility of these devices;
- should be sufficient to prevent unauthorized entry to the radiation beam and preclude any unintentional radiation exposure.



**OHIO LIME COMPANY** • WOODVILLE, OHIO 43469 • 419-849-2321

A Subsidiary of Steel Industries Limited



RADIATION PROTECTION (Con't)

Texas Nuclear personnel will perform the initial radiation survey and leak testing at the time of installation. Additionally, our personnel will receive specific training at the time of installation. This training will include construction features of the device, source integrity, beam geometry and intensity and operating details of the device. Any precautionary steps like the addition of shielding, signs, or precautions to be taken will be covered at the time in accordance with Texas Nuclear installation procedures and training.

The source holder(s) will be tested for source integrity:

Model 5193 at least once every three years.

Leak testing will be performed by Texas Nuclear Procedure QT/1K.

- i. In the event some catastrophic emergency occurs and these devices may be involved, we will notify Texas Nuclear and await further instructions.
- ii. Any repair, relocation or removal of the source holder will be done by Texas Nuclear personnel.

No waste disposal is involved. In the event that the gauge is damaged or its use discontinued, we shall notify Texas Nuclear for removal and return the gauge for repair or disposal of the source material.

A radiation survey will be performed by Texas Nuclear personnel upon installation to assure the radiation levels around the device and in accordance with Texas Nuclear installation procedures.