

24-20371-01
030-18311

FORM NRC-313 I (3-80) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION		1. APPLICATION FOR: (Check and/or complete as appropriate)	
APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL				X	a. NEW LICENSE
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.					b. AMENDMENT TO: LICENSE NUMBER
					c. RENEWAL OF: LICENSE NUMBER
2. APPLICANT'S NAME (Institution, firm, person, etc.) OZARK ENVIRONMENTAL LABORATORIES, INC. TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (314) 364-8900		3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION WILLIAM E. ANDERSON, JR. - P.E. TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (314) 364-8900			
4. APPLICANT'S MAILING ADDRESS (Include Zip Code) (Address to which NRC correspondence, notices, bulletins, etc., should be sent.) P.O. Box 806 Rolla, Missouri 65401		5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED (Include Zip Code) 1306 Bishop Avenue Rolla, Missouri 65401			
(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				Applicant	
a.	WILLIAM E. ANDERSON, JR.	P.E.		Check No. 1009	
b.	WILLIAM E. MERTEN	TECHNICIAN		Amount \$110	
c.	KEVIN L. LUCY	TECHNICIAN		Type of Fee New License	
7. RADIATION PROTECTION OFFICER WILLIAM E. ANDERSON, JR., P.E.		Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.		Date Checked 4/27/83	
8. LICENSED MATERIAL					
L I N E	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source)	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME	
NO.	A	B	C	D	
(1)	CESIUM/137	Date 4/27/83 Log April 17, 1983	CRN-131	No Single Source to exceed 10 Millicuries, CS 137	
(2)	AMERICIUM/241/BE	By Cap Orig. To Action Compl. 4/29/83	CPN-131	No Single Source to exceed 50 Millicuries, AM 241	
DESCRIBE USE OF LICENSED MATERIAL E					
(1)	TO BE USED IN CPN CORP MODEL, MC, SERIES DENSITY/MOISTURE GAUGES				
(2)	FOR THE MEASUREMENT OF DENSITY AND MOISTURE OF CONSTRUCTION				
(3)	MATERIALS AT VARIOUS JOBSITES.				
(4)					

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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)	MC SERIES MOISTURE/DENSITY GAUGE	CAMPBELL PACIFIC NUCLEAR CORP.	MC SERIES
(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)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

N.A.

☐ b. CALIBRATED BY APPLICANT

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

N.A.

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input checked="" type="checkbox"/> (1) FILM BADGE <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____ _____ _____	SIEMENS GAMMASONICS 2000 Nuclear Drive Des Plaines, IL 60018 ATTN: Film Badges	<input checked="" 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

N.A.

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.

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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 <i>(See Section 170.31, 10 CFR 170)</i>	b. CERTIFYING OFFICIAL <i>(Signature)</i>
	c. NAME <i>(Type or print)</i> WILLIAM E. ANDERSON, JR.
(1) LICENSE FEE CATEGORY:	d. TITLE
(2) LICENSE FEE ENCLOSED: \$	e. DATE



CPN CORP
130 SO. BUCHANAN CIRCLE
PACHECO, CA. 94553
PHONE 415-687-6472

TECH DATA SHEET # 11C

PERMANENT STORAGE LOCATION FOR NUCLEAR GAUGES

CERTIFICATION

OZARK ENVIRONMENTAL LABS, INC
(Licensee)
1306 BISHOP AVE.
(Permanent Storage Address)
ROLLA, MISSOURI 65401 12382
(City, State, and Zip) (Date)

I certify that the sketch of the proposed storage location is an accurate representation of our storage intentions. I also certify that the gauge will be stored on temporary jobsites in accordance with the same procedures and recommendations as closely as is practical.

X

Rad Safe Officer

GENERAL

License regs require secure, locked storage of nuclear devices when not in use, with final key access only by authorized users. Each storage area will differ for each user, however, the final key access integrity will be maintained.

RECOMMENDATIONS

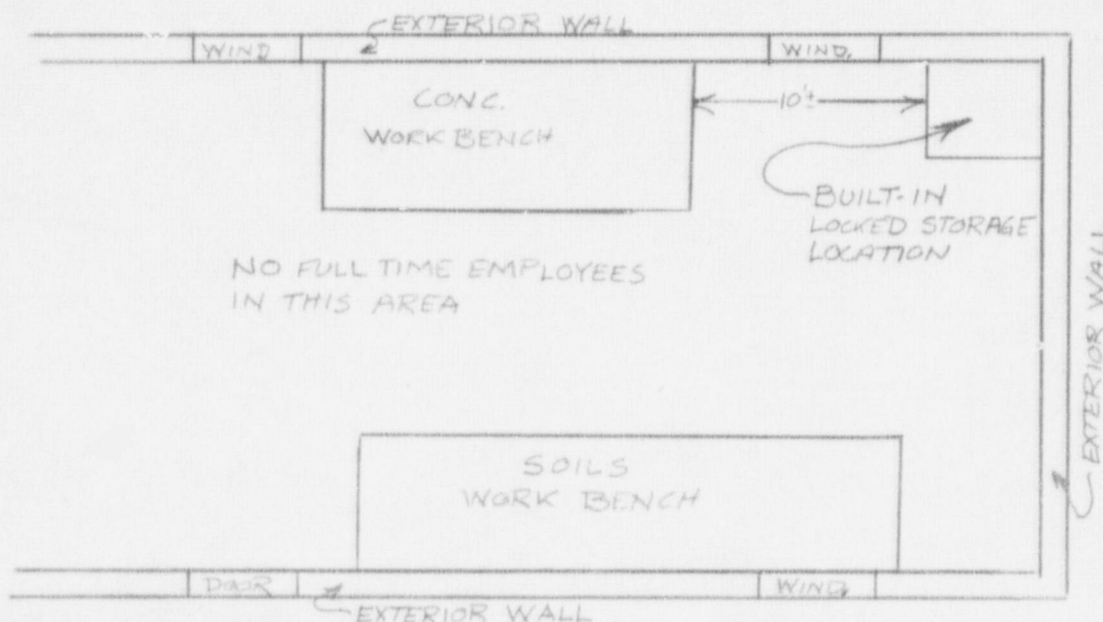
- * Lighted area with electrical outlet for charging gauge while in storage.
- * Gauge(s) 10' from nearest desk or other location requiring full time employee attention. Coming and going around the gauge is alright.
- * Check the other side of the nearest wall by the gauge. Somebody may work there full time.
- * In a space shared with others, the gauge will be separately locked to the wall, floor, or pipe, thus preventing removal or movement.

TYPICAL STORAGE EXAMPLES

- Gauge shipping case, or "like" case, secured to the floor or wall in a shared closet or cabinet. Radiation signs on case, case locked and immobile.
- Gauge stored inside cabinet or closet with lock and sign on outside of cabinet or closet, limited key access. Gauge case is not necessarily locked (charging, etc.)
- Gauge case and/or cabinet or closet not locked, however, the room is locked with limited key access. Sign on room door.

PROPOSED STORAGE LOCATION SKETCH

The following sketch proposes the manner in which we will store our nuclear gauges. Doors, windows, desks, and work areas are designated. We have designated the hours per day required for employees for each work area within 10 feet of the gauge.





CPN CORP.
130 SO. BUCHANAN CIRCLE
PAHCO, CA. 94553
415-687-6472

TECH DATA SHEET # 11A

RECOMMENDED RADIATION SAFETY PROGRAM - LICENSING

THE FOLLOWING NUCLEAR SAFETY PROCEDURES WILL BE OBSERVED AT ALL TIMES. A COPY OF THIS PROCEDURE SHEET WILL BE MAINTAINED WITH THE GAUGE IN THE SHIPPING CASE AS WELL AS IN THE LICENSE FILE WITH THE RADIATION SAFETY OFFICER.

1. The Nuclear Gauge will be securely restrained in vehicles to prevent theft or loss while unattended or in an accident. Metal clamps, chains, or bars will be used.
2. The Nuclear Gauge and its shipping case will be hidden from view while in an unattended vehicle to minimize attractive nuisance value.
3. All users will wear film badges when using the Nuclear Gauge. Badges will be stored away from gauges when not in use and will be protected from external heat.
4. Radiation labels or placards will be removed from vehicles when not actually transporting the Nuclear Gauge to avoid confusion should an accident occur to the vehicle when it does not contain the Gauge.
5. Gauges will be securely locked in storage areas when not in use. Keys will be restricted to authorized users only.
6. The Nuclear Gauge will be used only by users specifically authorized in writing by the Radiation Safety Officer.
7. The Gauge will be leak tested annually using Campbell Pacific Nuclear Test Kit TD-11B or other approved kit. Results will be maintained for permanent record and inspection.
8. Disposal of the source or of the device will not be done by licensee directly.

In the event of emergency disposal, we shall contact the factory or other authorized disposal facility for instructions.

The unit will be transferred only to authorized licensees for this specific device and a record of transfer will be retained in our files, with proof of license authority by the recipient, in the event of sale, trade, loan, or other transfer.
9. In the event of emergency with possible damage to the radioactive source:
 - * Freeze site - Stop any involved vehicles.
 - * Restrict access to 10' from the gauge, vehicles, or tracks.
 - * Call for competent, trained assistance:

RSO: WILLIAM E. ANDERSON, JR. - P.E. 314-364-8900

PUBLIC HEALTH OFFICE: ROLLA, MO. 314-364-3381

CIVIL DEFENSE: ROLLA, MO. 314-341-3115

CPN FACTORY: _____ 415-687-6472

OTHER: _____

INDIVIDUAL GAUGE LEAK TEST INSTRUCTIONS

PORTAPROBE MODEL A (Single, combined source)

1. Remove the chassis and heat shield. DO NOT REMOVE THE RED COVER OVER THE SOURCE MECHANISM.
2. Swab around the edges of the RED COVER, the grommet, and, (from the outside), around the four mounting screws on the bottom of the gauge under the source mechanism.

PORTAPROBE MODEL B, BR, & BRC (Single, combined source)

1. Do NOT remove the chassis. Do NOT extend source. Leave in SAFE position!
2. Up end the gauge, stand behind it, swab around the brass cleanout ring on the bottom with the shutter CLOSED.

PORTAPROBE MODEL MC SERIES (Two sources with same swab)

1. First, remove the four screws and lift the electronic assembly out of the case. Swab the RED SPOT beside the moisture detector to test the Americium 241/Be source.
2. Then, repeat the Model BR test procedure. This will test the Cesium 137 source in the rod.

HYDROTECTOR MODEL MC-M (Single, internal source)

1. Remove the flat plate on the end of the gauge. Swab around the Radioactive Source Label visible inside the opening.

DEPTH GAUGES, MODEL 500 SERIES, ANY FORM

1. Lay gauge on its back. Swab around the inside of the access hole on the bottom of the case. It is not necessary to extend the probe itself, although this is permissible.

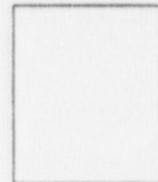
(Be sure to note the type of gauge on the reverse of this form. Model 501 has a combination CS/AM source, Model 502 has Cesium only, and Model 503 has Americium only.)

OTHER DEVICES (Other Soil Gauges, Industrial Devices, etc.)

1. This Leak Test Kit can be used for any authorized swab test. Refer to the manufacturer's leak test instructions and use this kit accordingly. Properly identify the device and the radioactive material and quantity on the reverse of this form.
2. If instructions are not available, contact the manufacturer, CPN Factory, or your local Public Health Officer for assistance in effecting a proper test.

CPN campbell
pacific
nuclear

130 So. Buchanan Circle • Pacheco, CA 94553



RADIATION SAFETY OFFICER



CPN CORP
130 SO. BUCHANAN CIRCLE
PACHECO, CA. 94553
PHONE 415-687-6472 TELEX 171289

Leak Test Kit

(CPN # TD-11B)

GENERAL:

1. Refer to the instructions on the reverse of this form and/or in your device manual for the specific locations and procedures for leak testing your nuclear device.
2. Remove the swab from the plastic container, wet it with detergent solution, and swab the appropriate area per the instructions for the device.
3. Return the swab to the plastic container.

(It is not necessary to dismantle the source mechanism or to expose the source on any CPN product in order to take a leak test. Read the instructions!)

COMPLETE BOTH SIDES OF THIS FORM:

4. Fill in the required device identification data below.

Fill in the name and address of the Radiation Safety Officer (RSO) on the reverse of this form for future automatic return mail reminder service of the next leak test requirement.

Read your license and check off which leak test period box applies for your next leak test requirement. One month before the next leak test is due, we will mail the "Tearoff" portion of this kit as a reminder to obtain another LEAK TEST KIT to avoid violation of your license terms. It is necessary that CPN has accurate name, address, and license period information in order to be able to provide this service.

GULF NUCLEAR, INC.
202 MEDICAL CTR BLVD
WEBSTER, TX 77598

SEND TO LABORATORY:

5. PLACE THE SWAB AND THIS FOLDER IN A WINDOW ENVELOPE SO THIS ADDRESS SHOWS IN WINDOW.

Results will be forwarded by mail to the RSO address you place on the reverse of this form. If test is unsatisfactory, RSO will be notified by wire or telephone.

LEAK TEST DATA:

DATE YOU TOOK THE TEST _____

DEVICE NAME _____ MODEL # _____ SERIAL _____

SOURCE TYPE AND SIZE: Radium 226 _____ mCi Cesium 137 _____ mCi Americium 241 _____ mCi

Other Material (Identify) _____ Millicuries

REQUIRED TEST PERIOD STATED IN YOUR LICENSE: 6 Mo. _____ 1 Yr. _____ 3 Yr. _____

REMINDER TO R.S.O.:
(Leak Test is Due)

This is mailed back to you by CPN one month prior to your next Leak Test requirement.

PLEASE SEND US _____ KITS @ \$15.00 EACH. BILL US ON PO # _____ OR,
PAYMENT IS ENCLOSED _____ SIGNED _____ DATE _____

Certificate of Completion

This is to certify that KEVIN L. LUCY has completed the basic training

course on Radiation Safety and Use of Nuclear Soil Gauges, held

this 12th day of FEBRUARY 19 82, held at ASCOR, INC. City of ST. LOUIS

State of MISSOURI by Campbell Pacific Nuclear Corporation.

Richard P. Westkamp
RADIATION SAFETY OFFICER

INSTRUCTOR

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This is to certify that WILLIAM E. MERTEN has completed the basic training

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INSTRUCTOR

RADIATION SAFETY OFFICER

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PRINCIPLES AND PRACTICES OF RADIATION PROTECTION

Theory, terminology, and practical explanations of Radioactive Materials, license requirements, Storage, transportation, and Emergency Procedures to be used with portable nuclear devices typical of "soil, agricultural, roof, and other construction gauges using small (not more than 300 millicurie) sources in sealed capsules.

RADIOACTIVITY MEASUREMENT STANDARDIZATION AND MONITORING TECHNIQUES AND INSTRUMENTS

Demonstration of radiation levels typical with use of small, portable devices using conventional survey meter. Concentration on Inverse Squares Law factors, effects of shielding, time, and distance in use of materials.

MATHEMATICS AND CALCULATIONS BASIC TO THE USE AND MEASUREMENT OF RADIOACTIVITY

Determination of typical radiation levels in MRcMs within working distance of a typical portable "construction device", calculation of probable weekly radiation dose under a heavy work condition, and relation of that dose to the NRC maximum annual allowances for occupational use of radioactivity.

Establishment of relationship of this occupational dose to that obtained from normal life exposures of external radiation at sealevel and high elevations, jet plane travel, normal health XRAYs, etc.

BIOLOGICAL EFFECTS OF RADIATION

General discussion of effects of low level radiation on the body with emphasis on the relationship of routine lifestyle exposure (environmental, routine medical, smoking, etc) to the added exposure from normal use of portable devices using small millicurie sources.

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Richard K. Gorkov

INSTRUCTOR

RADIATION SAFETY OFFICER

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Robert R. Thompson
INSTRUCTOR
RADIATION SAFETY OFFICER

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