

ALLGEIER, MARTIN & ASSOCIATES, INC.

CONSULTING ENGINEERS AND ARCHITECTS

TELEPHONE  
417 624-5703

JOPLIN, MISSOURI 64801

2820 RANGE LINE  
P. O. BOX 2277

July 23, 1980

U.S. Nuclear Regulatory Commission  
Licensing Procedure  
799 Roosevelt Road  
Glen Elyn, Illinois 60137

RECEIVED BY LFMS	
Date	8/11/80
Log	Aug 80 - VII
By	in
Orig. To	
Action Compl.	8/12/80

RE: Revised Materials License  
No. 24 - 18942-01

030-17383

Gentlemen:

Please find enclosed our check in the amount of forty dollars (\$40.00) in compliance with Part 170 "Fees For Facilities And Materials Licenses", Section 170.31, 1, 1, "Amendment".

The Amendment has been necessitated for the following reasons:

1. The New England Nuclear Corp. Model No. NER 5604 is not available and is being replaced by Campbell Pacific Nuclear Corp. MC-Series.
2. The seven (7) employees listed below have completed the basic training course on radiation safety and use of nuclear soil gauges (certificates enclosed).

- a. Carson Crouse
- b. Dale Boydston
- c. Jim Willis
- d. Glen Davidson
- e. Don Walker
- f. Jack McKibben
- g. Paul Cole

Applicant	
Check No.	2202
Amount/Fee Category	\$40.00 (34)
Type of Fee	Amendment
Date Check Rec'd.	8/11/80
Received By	Jackson

In addition to the above revisions we would like the states of Kansas, Oklahoma and Arkansas added to Item 10 of the license.

To assist you in the processing of this Amendment to License No. 24-18942-01, we are enclosing a revised copy of our original license and application for by-product material license, Form NRC-3131, and a Xerox copy of Tech Manual TM-1 Campbell Pacific Nuclear Corp. on radiation safety, operating procedures and technician maintenance.

JUL 28 1980

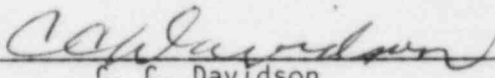
8909240547

U.S. Nuclear Regulatory Commission  
July 23, 1980  
Page -2-

We trust you will find the above in order. Should you require additional information, please let us hear from you.

Very truly yours,

ALLGEIER, MARTIN & ASSOCIATES, INC.

By   
C. C. Davidson  
Vice President

CCD/DEW/tjh

Enclosures

U. S. NUCLEAR REGULATORY COMMISSION  
MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1. Allgeier, Martin and Associates, Incorporated		3. License number 24-18942-01
2. P.O. Box 2277 2820 Rangeline Road Joplin, Missouri 64801		4. Expiration date June 30, 1985
		5. Docket or Reference No.
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Cesium-137/ Americium-241	A. Sealed source ( <del>New England Nuclear Corporation Model No. NER-560A</del> ) Campbell Pacific Nuclear Corp. - 131	A. 2 sources not to exceed 10 millicuries of cesium-137 and <sup>50</sup> 55 millicuries of americium-241
9. Authorized use		
Campbell Pacific Nuclear MC-Series		
A. For use in <del>Soiltest, Incorporated Model NIG-5DT</del> surface moisture/density gauge.		

## CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 2820 Rangeline Road, Joplin, Missouri and at temporary job sites of the licensee throughout the State of Missouri, Oklahoma, Arkansas & Kansas
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material shall be used by, or under the supervision and in the physical presence of, Carson Crouse.

Dale Boydston  
Jim Willis  
Glen Davidson  
Don Walker  
Jack McKibben  
Paul Cole

MATERIALS LICENSE

Supplementary Sheet

License Number 24-18942-01

Docket or  
Reference No. \_\_\_\_\_

Continued from Page 1

CONDITIONS

13. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
  - (3) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer to another person unless they have been leak tested within six months prior to the date of use of transfer.
  - B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
  - C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five (5) days of the test with the U. S. Nuclear Regulatory Commission, Region III, Office of Inspection and Enforcement, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, describing the equipment involved, the test results, and the corrective action taken.
  - D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an Agreement State to perform such services.
14. Sealed sources containing licensed material shall not be opened or removed from their respective source holders by the licensee.

## MATERIALS LICENSE

Supplementary Sheet

License Number 24-18942-01

Docket or

Reference No. \_\_\_\_\_

Continued from Page 2

## CONDITIONS

15. Maintenance, repair and initial radiation survey of devices containing licensed material and installation, replacement, and disposal of sealed sources containing licensed material used in devices shall be performed only by the device manufacturer or by other persons specifically authorized by the Commission or an Agreement State to perform such services.
16. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."
17. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6., 7., and 8. of this license in accordance with statements, representations, and procedures contained in application dated April 24, 1980; and letter dated May 19, 1980. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

Date

JUL 1 1980

For the U. S. Nuclear Regulatory Commission

by

Samuel L. Putzel  
Material Licensing BranchDivision of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

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.

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

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

Allgeler, Martin & Associates, Inc.

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

C. C. Davidson

TELEPHONE NUMBER, AREA CODE - NUMBER EXTENSION  
(417) 624-5703 X-14

TELEPHONE NUMBER, AREA CODE - NUMBER EXTENSION  
(417) 624-5703 X-14

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

P.O. Box 2277  
2820 Rangeline Road  
Joplin, Missouri 64801

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

2820 Rangeline Road  
Joplin, Missouri 64801

(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

Carson Crouse

Construction Inspector

~~Jim Willis~~

~~Survey Crew Chief - Inspector~~

~~Ralf Simon~~

(See Attached For Additional Personnel)

~~Survey Crew Chief - Inspector~~

7. RADIATION PROTECTION OFFICER

Carson Crouse

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.	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 ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
A	B	C	D	
(1)	Cesium 137	Sealed Source	New England Nuclear Corp., Model NER-560A	$10^{+1}$ , mCi $Cs^{137}$ , and $55^{+5}$ , mCi
(2)	Americium 241		Campbell Pacific Nuclear Corp. MC-Series	Am 241
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL

Campbell Pacific Nuclear Corp.

- (1) Used In ~~Soiltest Inc.~~ Nuclear Moisture Density Meter Model MC-Series  
(2) ~~MC-501~~ for General Field Measurements of Moisture and Density.

9. STORAGE OF SEALED SOURCES			
NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Nuclear Moisture Density Meter	Campbell Pacific Nuclear Corp. <del>Soiltest Inc.</del>	MC-Series <del>NIC-50T</del>
(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)	"NONE					
(2)	REQUIRED"					
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10	
<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY  <b>"NONE REQUIRED"</b>	<input type="checkbox"/> b. CALIBRATED BY APPLICANT <i>Attach a separate sheet describing method, frequency and standards used for calibrating instruments.</i>

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): _____	<b>Nuclear Sources and Services, Inc.</b>	<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).)	
<input type="checkbox"/> a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC. <input checked="" type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. <input type="checkbox"/> c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. <input type="checkbox"/> d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.	

14. WASTE DISPOSAL	
a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED <b>Nuclear Sources and Services, Inc. - Through Soiltest, Inc.</b>	
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. 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)

*C. Davidson*

c. NAME (Type or print)

d. TITLE  
**C. Davidson**

(1) LICENSE FEE CATEGORY

e. DATE  
**Vice-President**

(2) LICENSE FEE ENCLOSED \$

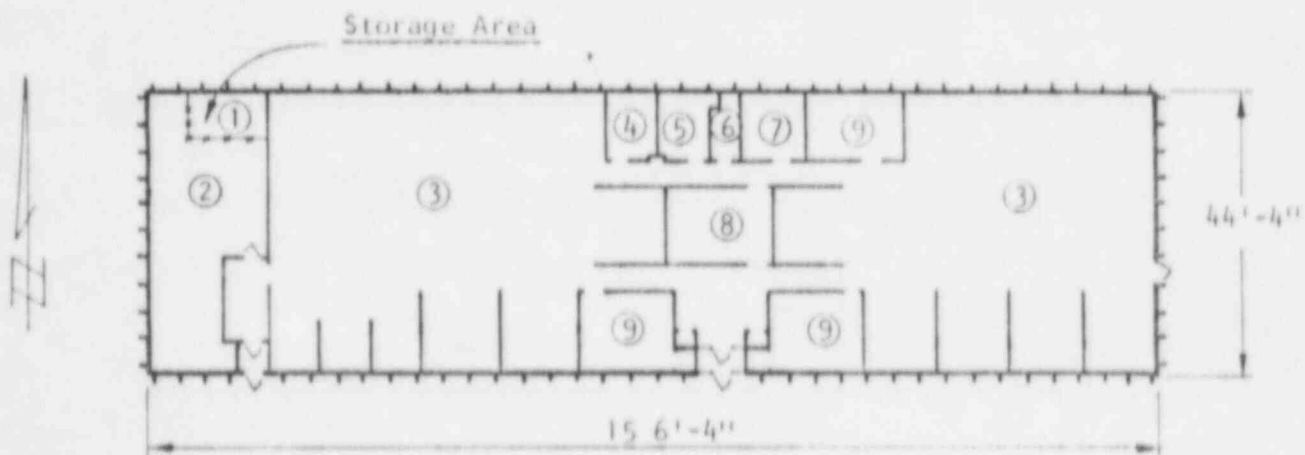
**April 24, 1980**



Item 13: Storage Area:

MC-Series

The ~~MIC-507~~ will be stored in a 7' x 12' storage area in our Supply and Equipment Room (under lock at all times) in the West end of our North office building. The area will be marked with the appropriate warning signs concerning radioactive material.



LEGEND

- |                                  |                       |                     |
|----------------------------------|-----------------------|---------------------|
| (1) Storage Area                 | (4) Ladies' Rest Room | (7) Break Room      |
| (2) Equipment & Supply & Storage | (5) Men's Rest Room   | (8) Conference Room |
| (3) Drafting Area                | (6) Storage           | (9) Office          |

SKETCH OF NORTH BUILDING

ALLGEIER, MARTIN & ASSOCIATES, INC.  
JOPLIN, MISSOURI

STORAGE AREA  
NUCLEAR MOISTURE DENSITY METER

ALLGEIER, MARTIN & ASSOCIATES  
CONSULTING ENGINEERS

DRAWN BY KAH/ET

DATE 4/24/80

CHECKED BY DEW

SCALE 1" = 30'

APPROVED BY DEW

NO

Revised July, 1980

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

(Cont'd)

Item 15: Radiation Protection Program:

Using Health Physics Leak Test Kit model HP-C-18, leak test the unit each 6 months. The radiation control officer will oversee the test and ensure that it is performed in accordance with the following procedures:

1. Dissolve the detergent in the packet in a small amount of water.
2. Remove the swab from the plastic container on the left and dip it into the water solution and proceed to wipe the source container according to your license requirements. Replace the swab in the plastic container from which it was removed.
3. Remove the dry swab from the plastic container on the right and repeat the wipe process. DO NOT dip this swab in the detergent. Replace this swab in the plastic container from which it was removed in the kit.

Insure that the swabs are replaced in the plastic containers from which they are removed. The information on the kit cover will be filled in and the test kit mailed to specified address.

The training for the performance of the leak test was obtained from ~~Selltest, Inc.~~ manufacturer of the meter.

Campbell Pacific Nuclear Corp.

Initial radiation survey performed by manufacturer prior to shipment. All servicing, repair and maintenance of the source to be performed by the manufacturer of the sealed source.

ALLGEIER, MARTIN & ASSOCIATES, INC.

CONSULTING ENGINEERS AND ARCHITECTS

TELEPHONE  
417 624-5703

JOPLIN, MISSOURI 64801

2820 RANGE LINE  
P. O. BOX 2277

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

(Cont'd)

Item 16: Formal Training In Radiation Safety:

1. Carson Crouse

Missouri State Highway Department Construction Inspector, October, 1978. Received instruction in use of Nuclear Moisture Density Meter. Also, training ~~at Soil Test, Inc. Factory~~ by Campbell Pacific Nuclear Corp. In principles and practices of radiation protection, safe operation, storage and transportation, emergency handling procedures, and leak testing.

~~2. Jim Willis~~ )

~~Ralf Simon~~ ) ~~To be trained by the Radiation Protection Officer.~~

2. Dale Boydston  
Jim Willis  
Glen Davidson  
Don Walker  
Jack McKibben  
Paul Cole

Basic training course on radiation safety and use of Nuclear Soil Gauges 7/11/80 by Campbell Pacific Nuclear Corp. (copies of certificates attached)

ALLGEIER, MARTIN & ASSOCIATES, INC.

CONSULTING ENGINEERS AND ARCHITECTS

TELEPHONE  
417 624-5703

JOPLIN, MISSOURI 64801

2820 RANGE LINE  
P. O. BOX 2277

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

(Cont'd)

Item 17: Experience:

1. Carson Crouse - Instruction in use of Nuclear Moisture Density Meter while employed by The Missouri State Highway Department, and course by Campbell Pacific Nuclear Corp. 7/11/80

~~2. Jim Willis - None~~

~~3. Ralf Simon - None~~

2. Dale Boydston      Instruction in use of Nuclear Soil Gauges  
Jim Willis      by Campbell Pacific Nuclear Corp. 7/11/80  
Glen Davidson      (copies of certificates attached)  
Don Walker  
Jack McKibben  
Paul Cole

# Certificate Of Completion

This is to certify that CARSON CROUSE has completed the basic training  
course on *Radiation Safety and Use of Nuclear Soil Gauges*, held  
this 11 day of JULY 19 80, held at Allgeier-Martin Off. City of JOPLIN  
State of MISSOURI by Campbell Pacific Nuclear Corporation.

  
INSTRUCTOR

  
RADIATION SAFETY OFFICER

# Certificate Of Completion

This is to certify that DALE BOYDSTON has completed the basic training  
course on *Radiation Safety and Use of Nuclear Soil Gauges*, held  
this 11 day of JULY 19  , held at Allgeier-Martin Off. City of JOPLIN  
State of MISSOURI by Campbell Pacific Nuclear Corporation.

  
INSTRUCTOR

  
RADIATION SAFETY OFFICER



# Certificate of Completion

This is to certify that JIM WILLIS has completed the basic training  
course on Radiation Safety and Use of Nuclear Soil Gauges, held

this 11 day of JULY 19<sup>80</sup>, held at Allgeier-Martin Off. City of JOPLIN

State of MISSOURI by Campbell Pacific Nuclear Corporation.

*[Signature]*

INSTRUCTOR

*[Signature]*

RADIATION SAFETY OFFICER



# Certificate Of Completion

This is to certify that GLEN DAVIDSON has completed the basic training  
course on *Radiation Safety and Use of Nuclear Soil Gauges*, held  
this 11 day of JULY 19 80, held at Allgeier-Martin Off. City of JOPLIN  
State of MISSOURI by *Campbell Pacific Nuclear Corporation*.

  
INSTRUCTOR

  
RADIATION SAFETY OFFICER

# Certificate Of Completion

This is to certify that DON WALKER has completed the basic training  
course on *Radiation Safety and Use of Nuclear Soil Gauges*, held  
this 11 day of JULY 19 80, held at Allgeier-Martin Off. City of JOPLIN  
State of MISSOURI by Campbell Pacific Nuclear Corporation.

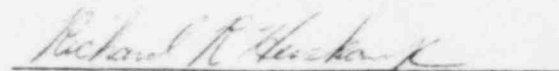
[Signature]  
INSTRUCTOR

[Signature]  
RADIATION SAFETY OFFICER

# Certificate Of Completion

This is to certify that JACK McKIBBEN has completed the basic training  
course on *Radiation Safety and Use of Nuclear Soil Gauges*, held  
this 11 day of JULY 1980, held at Allgeier-Martin Off. City of Joplin  
State of MISSOURI by *Campbell Pacific Nuclear Corporation.*

  
INSTRUCTOR

  
RADIATION SAFETY OFFICER

# Certificate of Completion

This is to certify that PAUL COLE has completed the basic training  
course on *Radiation Safety and Use of Nuclear Soil Gauges*, held

this 11 day of July 19 80, held at Allgeier-Martin Off. City of JOPLIN

State of MISSOURI by Campbell Pacific Nuclear Corporation.

Richard R. Hooper

INSTRUCTOR

Richard R. Hooper

RADIATION SAFETY OFFICER