

APPLICATION FOR MATERIALS LICENSE - TELETHERAPY

**INSTRUCTIONS** - Complete Items 1 through 22 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 22 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Parts 19, 20, 21, and 35 and the licensee fee provision of Title 10, Code of Federal Regulations, Part 170. The licensee fee category should be stated in Item 22 and the appropriate fee enclosed.

1. a. NAME AND MAILING ADDRESS OF APPLICANT (Institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE Cleveland Radiation Therapy Consultants Suite B1, Medical Staff Office Building 3100 MacCorkle Ave., S.E. Charleston, W. Va., 25304		1. b. STREET ADDRESS(ES), ACTUAL LOCATION OF TELETHERAPY SOURCE, INCLUDING BUILDING NAME, ROOM NUMBER, ETC. Cobalt 60 room - same address as 1a.	
TELEPHONE	AREA CODE (304)	NUMBER 345-0666	
2. PERSON TO CONTACT REGARDING THIS APPLICATION Warren Bryant, RSO 304-345-0666		3. THIS IS AN APPLICATION FOR: (Check appropriate item) <input type="checkbox"/> a. NEW LICENSE <input checked="" type="checkbox"/> b. AMENDMENT TO LICENSE NO. 47-15717-01 <input type="checkbox"/> c. RENEWAL OF LICENSE NO. <del>47-15717-01</del>	
TELEPHONE	AREA CODE (304)	NUMBER 345-0666	
4. INDIVIDUAL USERS (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.) A. Don Wolff, M.D. (already on license) Karen Cuple, M.D. Larry McCord, M.D.		5. RADIATION SAFETY OFFICER (RSO) (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.) Warren Bryant, RSO	

B. SEALED SOURCES TO BE USED IN TELETHERAPY UNITS (Attach supplemental pages if necessary)					
	BYPRODUCT MATERIAL (Element and Mass No.)	NAME OF SOURCE MANUFACTURER	SOURCE MODEL NUMBER	MAXIMUM ACTIVITY PER SOURCE	NUMBER OF SOURCES
A.					
B.					
C.					

7. TELETHERAPY UNITS (Attach supplemental pages, if necessary)	
	NAME OF MANUFACTURER (Include description, if unit is custom made)
A.	
B.	
C.	

B. USE (Attach supplementary pages, if necessary)		
A	B	C
HUMAN USE ONLY		
HUMAN AND OTHER USE (Specify on separate sheet)		
8512160468 351108 REQ2 LIC30 47-15717-01 PDR		

SEP-3 P1:2  
RECEIVED  
U.S. N.R.C.  
FEE MGMT. BRANCH

9. PERSONNEL MONITORING DEVICES		
TYPE (Check and/or complete as appropriate)	SUPPLIER (Service Company)	EXCHANGE FREQUENCY
(1) FILM BADGE - WHOLE BODY	Sept - 1 - II	
(2) THERMOLUMINESCENT DOSIMETER (TLD) - WHOLE BODY	Applicant... 768 / 932 Check No... 14A #40 + #190 Amount... Type of... Date Check Recd... 9/3/85 / 10/21/85 Received By... J. E. Jones / Jackson	
(3) OTHER (Specify):		

**INFORMATION REQUIRED FOR ITEMS 10 THROUGH 21**

For Items 10 through 21, check the appropriate box(es) and submit a detailed description of all the requested information. Begin each item on a separate sheet. Identify the item number and the date of the application in the lower right corner of each page. If you indicate that an appendix to the teletherapy licensing guide will be followed, do not submit the pages, but specify the revision number and date of the referenced guide: Regulatory Guide 10 Rev. \_\_\_\_\_ Date \_\_\_\_\_

**10. MEDICAL ISOTOPE COMMITTEE** *\*Not an institutional license*

Names and specialties attached, and (check one)

a. Duties as in Appendix A, or

b. Equivalent duties attached.

**15. BEAM STOPS**

Description of stops used to restrict beam orientation attached.

**16. SHIELDING EVALUATION**

Evaluation of proposed shielding attached.

**11. TRAINING AND EXPERIENCE**

☒ a. Supplements A & B attached for each individual user, and

b. Supplement A attached for RSO.

**17. OPERATING AND EMERGENCY PROCEDURES**

a. Description of operating procedures attached; and

b. Copy of emergency procedures attached.

**12. INSTRUMENTATION (check one)**

a. Appendix C form attached, or

b. List manufacturer's name and model number.

**18. INSTRUCTION OF PERSONNEL (check one)**

a. Training program and schedule in Appendix H followed, or

b. Description of instruction program for employees attached.

**13. CALIBRATION OF INSTRUMENTS (check one)**

☒ a. Appendix D, Part 2 procedures followed for instrumentation calibration, or

b. Description of sources, calibration frequency and equivalent procedures attached.

**19. LEAK TESTS OF SEALED SOURCES**

☒ Description of leak test procedures attached.

**14. FACILITIES AND EQUIPMENT**

a. Description and drawing of facilities attached; and

b. Description of patient viewing and communicating systems attached; and

c. Description of area safeguards attached.

**20. QUALIFIED EXPERT (Use only if the individual fails to meet 10 CFR 35.24 requirements.)**

Statement of qualifications of the expert who will perform teletherapy calibrations attached.

**21. ALARA PROGRAM (check one)**

ALARA Program as in Appendix I, or

Equivalent ALARA Program attached.

**22. CERTIFICATE**

(This item must be completed by the applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 1a certifies that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 35, and that all information contained herein, including supplements attached hereto, is true and correct to the best of our knowledge and belief.

\* LICENSE FEE REQUIRED  
(See section 170.31, 10 CFR 170)

170.31 7a

(1) LICENSE FEE CATEGORY

\$40.00

(2) LICENSE FEE ENCLOSED

b. APPLICANT OR CERTIFYING OFFICIAL (Signature)

*Isaac Warren Bryant, Jr.*  
**ISAAC WARREN BRYANT, JR.**

(2) TITLE

**PHYSICIST - RSO**

c. DATE

*June 1985*

**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.

# The American Board of Radiology

*Organized through the cooperation of the  
American College of Radiology, the American Roentgen Ray Society,  
the American Radium Society, the Radiological Society of North America,  
the Section on Radiology of the American Medical Association  
and the American Society of Therapeutic Radiologists  
Hereby certifies that*

**Larry P. McCord, M.D.**

*Has pursued an accepted course of graduate study  
and clinical work, has met certain standards and qualifications and  
has passed the examinations conducted under the authority of  
The American Board of Radiology*

**On this seventh day of June, 1980**

*Thereby demonstrating to the satisfaction of the Board  
that he is qualified to practice the specialty of*

**Therapeutic Radiology**

*E. Richard Lipp*  
President

*C. Allen Good*  
Secretary



*Item 11A*  
1 OCTOBER, 1984

CURRICULUM VITAE

NAME: Larry P. McCord, M.D.

DATE OF BIRTH: 21 April, 1948

PLACE OF BIRTH: Atlanta, Georgia

HOME ADDRESS: 810 Concord Road, Tallahassee, Florida 32308

HOME PHONE: (904) 877-9088

BUSINESS ADDRESS: Naval Regional Medical Center, Portsmouth,  
Virginia 23708, Department of Radiation Oncology  
through 30 Sept. 1984.

BUSINESS PHONE: (904) 877-9088

UNDERGRADUATE SCHOOL: University of Georgia, 1966 - 1967  
University of South Alabama, 1967 - 1970  
Major: Pre-Medicine

MEDICAL SCHOOL: Medical College of Georgia, Augusta, Georgia,  
1970 - 1974

INTERNSHIP: Naval Regional Medical Center, San Diego, California  
92134. 1974 - 1978

BOARD CERTIFICATION: 1980 American Board of Radiology in Therapeutic  
Radiology.

POSITIONS HELD: Naval Regional Medical Center, Portsmouth, Virginia  
23708. 1978 to present, Staff Radiation Oncologist.

Assistant Professor of Radiation Oncology Eastern  
Virginia Medical School. 1980 to Present  
Consultant to Eastern Virginia Medical School  
June, 1983 - Sept. 1983  
Head Independent Contractor Sept. 1983 - Oct. 1984

LICENSURE: Virginia, West Virginia

PROFESSIONAL SOCIETIES: American Society of Therapeutic Radiologists  
American Society of Clinical Oncology  
American College of Radiology



## PRECEPTOR STATEMENT

item 11A

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

## 1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

Caple, Dr. Karen S.

STREET ADDRESS

Suite B-1  
3100 McCorkle Ave., S.E.

CITY

Charleston

STATE

WV

ZIP CODE

25304

KEY TO COLUMN C  
PERSONAL PARTICIPATION SHOULD CONSIST OF:

1. Supervised examination of patients to determine the suitability for radioisotope therapy and recommendations on dosage to be prescribed.
2. Collaboration in calculation of radiation dose, related measurement, and modification of the originally prescribed dose as warranted by patient reaction to the radiation.
3. Followup of patients when required.
4. Study and discussion with preceptor of case histories to establish the most appropriate therapy procedures, limitations, contraindications, etc.

## 2. CLINICAL TRAINING AND EXPERIENCE OF PHYSICIAN CITED ABOVE IN USING SOURCES OR DEVICES FOR THERAPY

ISOTOPE A	TYPES OF TREATMENT B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Append additional information, if necessary) D
Co-60	COURSES OF TELETHERAPY		* These procedures are listed indicating primary physician, however additional experience was gained by assisting staff and colleagues.  ** New patients estimated 100 per year 1980-81 Intern 6mos in dept 1981-83 Resid 2yrs in dept
OR	INTERSTITIAL		
Cs-137	INTRACAVITARY		
I-125 Ir-192 OR Au-198 SEEDS	INTERSTITIAL	12*	
Ra-226	INTRACAVITARY	14*	
X-RAY AND ACCELERATOR THERAPY	COURSES OF THERAPY TREATMENT	250**	
Sr-90	SUPERFICIAL EYE CONDITIONS	60	
OTHER			

## DATES AND TOTAL NUMBER OF HOURS IN CLINICAL TRAINING USING SEALED SOURCES FOR THERAPY

1980-81 Intern no Endocurie assignment

1981-83 Resident - during this period of time the resident was assigned 50% of clinical time to the implant service and serves as primary physician on cases and is available to assist at any time.

O.R. - 4 hours per weekly

Endocurie rounds - 1 hour weekly

## 3. PRECEPTOR'S CERTIFICATION

NAME OF SUPERVISOR	NAME OF INSTITUTION	RADIOACTIVE MATERIAL LICENSE NUMBER
VACLAV KLEMENT, M.D.	LAC-USC MEDICAL CENTER DEPT OF RADIATION ONC	0134-70
MAILING ADDRESS	CITY	STATE
1200 N. STATE STREET OPD 1P-2	LOS ANGELES,	CA
		ZIP CODE
		90033

I CERTIFY THAT (a) THE INFORMATION PRESENTED ABOVE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND (b) I WAS AUTHORIZED BY THE REFERENCED RADIOACTIVE MATERIALS LICENSE(S) TO PERFORM THE PROCEDURES SPECIFIED ABOVE. I FURTHER BELIEVE THAT THE APPLICANT PHYSICIAN IS COMPETENT TO PERFORM THESE PROCEDURES INDEPENDENTLY. (Signature)

Vaclav Klement

DATE

8/3/85

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 of representation to any department or agency of the United States as to any matter within its jurisdiction.

TRAINING AND EXPERIENCE  
PROPOSED AUTHORIZED USER OR RADIATION SAFETY OFFICER

*ctem/119*

1. NAME OF PROPOSED AUTHORIZED USER OR RADIATION SAFETY OFFICER

Caple, Dr. Karen S.

2. STATE OR TERRITORY IN WHICH LICENSED TO  
PRACTICE MEDICINE (If physician)  
NC, CA, WV

3. CERTIFICATION

SPECIALTY BOARD

CATEGORY

MONTH AND YEAR CERTIFIED

Radiology

Therapeutic

pending

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES (To be completed by institution providing training)

FIELD OF TRAINING

LOCATION AND DATE(S) OF TRAINING

TYPE AND LENGTH OF TRAINING

LECTURE/LABORATORY  
COURSE (Hours)

FORMAL SUPERVISED  
OJT/LABORATORY  
EXPERIENCE (Hours)

RADIATION PHYSICS AND  
INSTRUMENTATION

1980-1981 INTERNSHIP  
1981-1983 RESIDENT

RADIATION PROTECTION

Dr. Caple, during a three year period, completed all the requirements in 1) radiation physics and instrumentation, 2) radiation protection, 3) mathematics pertaining to the use measurement, and shielding of radioactive sources and 4) radiation biology, for a resident's training in radiation oncology. (June 24, 1980 - June 30, 1983.)

MATHEMATICS PERTAINING TO THE  
USE, MEASUREMENT, AND SHIELDING  
OF RADIOACTIVE SOURCES

RADIATION BIOLOGY

5. EXPERIENCE WITH RADIOACTIVE MATERIALS\* (Actual use of radioisotopes or equivalent experience)

ISOTOPE

MAXIMUM AMOUNT FOR  
ANY SINGLE APPLICATION

WHERE EXPERIENCE WAS GAINED

DURATION OF EXPERIENCE

TYPE OF USE

\*Experience with sealed radioactive sources under the supervision of qualified instructors should include:

1. Review of initial source calibration and periodic spot check measurements of teletherapy units.
2. Initial source calibration of sealed sources other than teletherapy sources that are used for treatment purposes.
3. Calibration of ion chambers and survey meters.
4. Preparation of treatment plans and treatment times for teletherapy and brachytherapy.
5. Knowledge of appropriate radiation safety, quality control, and emergency procedures for handling and using sealed sources.

6. I CERTIFY THAT THE INFORMATION PRESENTED ABOVE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF (Signature of program supervisor)

TYPED OR PRINTED NAME

Vaclav Klement, M.D.

DATE

8/13/85

NAME OF INSTITUTION

LAC-USC MEDICAL CENTER DEPARTMENT OF RADIATION ONCOLOGY

MAILING ADDRESS

1200 N. STATE STREET

OPD-1P-2

CITY

LOS ANGELES,

STATE

CA

ZIP CODE

90033

RADIOACTIVE MATERIALS LICENSE NUMBER

0134-70

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.

## CALIBRATION OF SURVEY INSTRUMENTS

Check appropriate items.

- ☒ 1. Survey instruments will be calibrated at least annually and following repair.
- ☒ 2. Calibration will be performed at two points on each scale used for radiation protection purposes, i.e., at least up to 1 R/hr.

The two points will be approximately 1/3 and 2/3 of full scale. A survey instrument may be considered properly calibrated when the instrument readings are within  $\pm 10$  percent of the calculated or known values for each point checked. Readings within  $\pm 20$  percent are considered acceptable if a calibration chart, graph, or response factor is prepared, attached to the instrument, and used to interpret readings to within  $\pm 10$  percent. Also, when higher scales are not checked or calibrated, an appropriate precautionary note will be posted on the instrument.

## 3. Survey instruments will be calibrated

- ☐ a. By the manufacturer
- ☒ b. At the licensee's facility *by WARREN Bryant, R.S.O.*

## (1) Calibration source

Manufacturer's name J. L. Shepherd & Assoc.  
 Model no. Model 10  
 Activity in millicuries 100 (0.517)  
 or  
 Exposure rate at a specified distance \_\_\_\_\_  
 Accuracy  $\pm 5\%$   
 Traceability to primary standard NBS

☒ (2) The calibration procedures in Section I of Appendix D will be used (*Reporting form attached*)  
 or

☐ (3) The step-by-step procedures, including radiation safety procedures, are attached.

## c. By a consultant or outside firm

(1) Name \_\_\_\_\_

(2) Location \_\_\_\_\_

## (3) Procedures and sources

\_\_\_\_\_ have been approved by NRC and are on file in License No. \_\_\_\_\_

\_\_\_\_\_ have been approved by an Agreement State; a copy of the Agreement State license, the procedures, and a description of the sources are attached, and the consultant's report will contain the information on

\_\_\_\_\_ the attached "Certificate of Instrument Calibration."

\_\_\_\_\_ the consultant's reporting form as attached.

\_\_\_\_\_ are described in the attachment, and the consultant's report will contain the information on

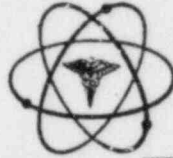
\_\_\_\_\_ the attached "Certificate of Instrument Calibration."

\_\_\_\_\_ the consultant's reporting form as attached.

Item 13a

**Isaac Warren Bryant**  
MEDICAL PHYSICIST  
RADIATION HEALTH OFFICER, USNR-R

Radiation Therapy  
Diagnostic Radiology  
Radiation Safety



Suite B1  
3100 MacCorkle Ave., S.E.  
Medical Staff Office Bldg.  
Charleston, West Virginia 25304  
Phone: 304 345-0666

CERTIFICATE OF INSTRUMENT CALIBRATION

CALIBRATION DATE \_\_\_\_\_

MANUFACTURER \_\_\_\_\_

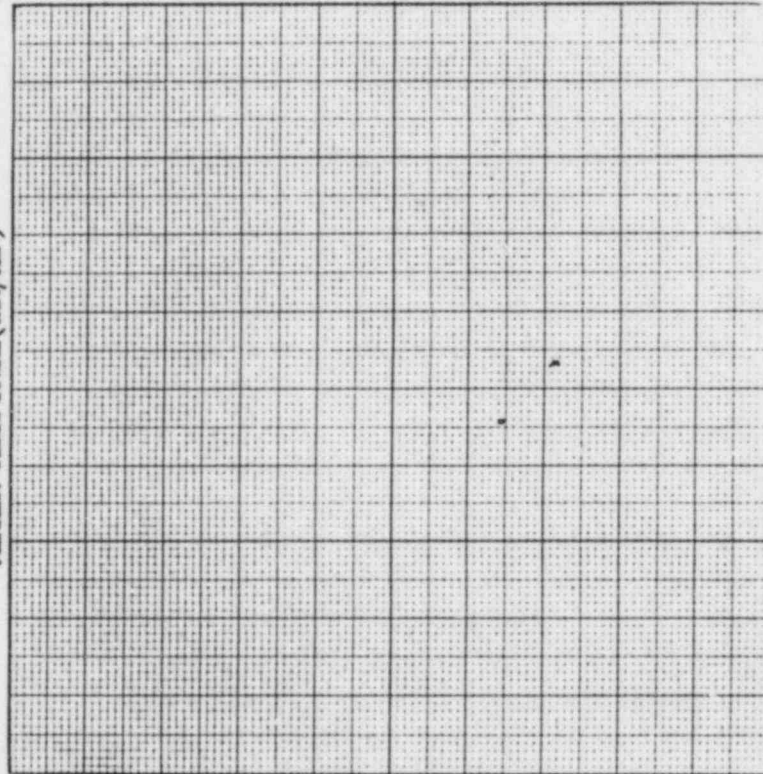
MODEL# \_\_\_\_\_ S/N \_\_\_\_\_

INTERNAL ADJUSTMENT \_\_\_\_\_

CHAMBER POSITION TO RADIATION  
FIELD \_\_\_\_\_

<u>METER RESPONSE</u>	<u>SCALE</u>	<u>TRUE EXPOSURE</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

METER RESPONSE (mR/hr)



TRUE EXPOSURE (mR/hr)

CORRECTION FACTOR FOR EACH SCALE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

CALIBRATION SOURCE \_\_\_\_\_ ACTIVITY \_\_\_\_\_ CALIBRATION ACCURACY \_\_\_\_\_ (NBS TRACEABLE)

CALIBRATED BY: \_\_\_\_\_

NEXT ROUTINE CALIBRATION DUE \_\_\_\_\_ INSTRUMENT OWNER \_\_\_\_\_



LEAK TEST PROGRAM FOR SEALED SOURCES  $Co^{60}$  &  $Cs^{137}$

1. Instrumentation used to detect removable activity from sources or adjacent areas will be either a Drexel Spectroscale IIIA well counter or a Harshaw Well ~~counter~~ interfaced with a Kenberry multichannel analyzer Series 35. Reference sources for calibration include a  $50 \mu Ci$   $Co^{57}$  and  $0.98 \mu Ci$   $Cs^{137}$  sources.

2. Counting efficiency, linearity, deadtime and geometrical variation responses from the instrumentation will be determined and used as multiplicative correction factor for sample count rates. Background counts from a "clean" sample wipe will be subtracted from all sample count rates. Sample count rates corrected for the above will then be converted to  $\mu Ci$  values.

$$\frac{(\text{Sample counts}) / \text{minute} \times \text{corr. factors} - 346 \text{ counts}}{2.22 \times 10^6 \text{ dpm}} = \mu Ci \text{ of removable activity.}$$

The multichannel analyzer is capable of electronically ~~eliminat~~ correcting for background and other correction factors, therefore 1 minute count rates ~~are~~ may be converted to  $\mu Ci$  values by  $\frac{CPM}{2.22 \times 10^6 \text{ dpm}} = \mu Ci \text{ value.}$

LEAK TEST - CONTINUED

Page 2

3. Method of removing radioactivity.

a.) from Cs<sup>137</sup> tube sources - damp paper towel wipes of each source and its storage slot will be performed at intervals prescribed by 10CFR part 35. These wipes will be inserted into disposable count tubes and sealed. If there is no removable activity in excess of 0.005  $\mu$ ci, the appropriate documentation will be recorded and samples disposed of. If the removable activity is  $\geq$  0.005  $\mu$ ci, then the responsible source shall be withdrawn from use and disposed of or repaired in accordance with Commission regulations. All wipes & clean-up material shall be disposed of in a likewise manner. All findings will be recorded and filed within 5 days to the appropriate regional NRC office.

b.) from Co<sup>60</sup> teletherapy devices. Due to the high activity, no attempt to wipe the source capsule will be made. Sample wipes will be made of the inner walls of collimators and of the source rod guides. The remainder of the procedure is as indicated for Cs<sup>137</sup> above.

LEAK TEST - CONTINUED

4.) Radiation Safety Procedures

When handling radioactive sources and/or wipe test samples a "sterile technique" involving the use of gloves and protective clothing shall be used. Remote handling of wipe test samples shall be effected whenever practical.

Wipe test material which indicate no removable activity shall be disposed of in the normal trash.

Wipe test materials indicating  $\geq 0.005 \mu\text{Ci}$  of removable activity will be returned, along with the offending source, to the manufacturer.

Survey meters will be utilized to inspect personnel in suspected contamination situations.

5.) Pertinent training & experience of Isaac Warren Bryant, the individual performing the test is currently documented with the NRC. A separate copy is attached in this package.

LEAK TEST PROCEDURE & RESULTS

DATE:

ISOTOPE(S)

SERIAL #

NOMINAL  
ACTIVITY

MANUFACTURER

SAMPLE #

RESULTS (uCi)

INSTRUMENTATION & REFERENCE SOURCE:

METHOD:

REQUIRED ACTION:

NEXT TEST DUE:

SOURCES AUTHORIZED UNDER LICENSE #:

COMMENTS:

TESTED BY: W. BRYANT

PHYSICIST & RSO