

DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK PETEREIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES QUALE, M.D.

RADIOLOGISTS

# MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

June 19, 1978

2449  
X-RAY DIAGNOSIS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CZESWIK  
BUSINESS MANAGER

Frank C. Davis, M.D.  
Radioisotopes Licensing Branch  
Division of Fuel Cycle and Material Safety

Control #91690

Dear Doctor Davis:

The following information is being supplied in support of our application for renewal of our license #40-01493-02, as requested in your letter dated May 1, 1978.

1. Victoreen Instrument Div. 10101 Woodland Avenue, Cleveland, Ohio 44104. Thyac III Model 490 Serial #1654 Beta-Gamma Survey Meter. Meter Ranges 0-20, 0-2, 0-.2 MR/hr, C.P.M. 0-800,000, 0-8000, 0-800. GM Probe Model 489-4.

Victoreen R-Meter Model 70, Serial No. 2233, 25 r and 100 r chambers.

A high intensity survey meter has been ordered. A copy of the order is attached.

A Cobalt 57 point source is being ordered and a copy of the order is enclosed.

A dose calibrator has also been ordered from Picker Company. A copy of the order is attached.

We have a Cesium 137 point source .216 Mcu. Serial #319-076-21 Date August 2, 1977. Copy of certificate of calibration is enclosed.

2. Our survey meters and Dose Calibrator will be checked and calibrated at least annually by James M. Hevezi, Ph.D., Certified Radiation Physicist, Route #1, Box 122E, Rapid City, South Dakota 57701. The procedures followed will be equivalent to those found in Appendix D of the Medical Licensing Guide. The Dose Calibrator will be tested upon installation and annually thereafter. The meters will be calibrated at the same time.

3. Individual dosages are determined by calculation using the assayed activity determined by the supplier and the appropriate decay factor. This is cross checked by pre-administration counting using a Cliniscaler, Picker model 628150, Serial #18239.

A background is taken before each use and the Cliniscaler is checked monthly with a Cs 137 source .216 Mc. or anytime there is a questionable variation in the counting.

A dose calibrator has been ordered and will be used as another check on dosage when it is received and checked and will be checked annually thereafter.

8602060153 851122  
REG4 LIC30  
40-01493-02 PDR

COPIES SENT TO OFF. OF  
INSPECTION AND ENFORCEMENT

DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK PETEREIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES QUALE, M.D.

## MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

2443  
X-RAY DIAGNOSTICS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CZESWIK  
BUSINESS MANAGER

### RADIOLOGISTS

Page 2  
June 19, 1978

4. The survey meters and dose calibrator will be calibrated at least annually in accordance with Appendix D of Medical Licensing Guide, by a certified physicist, J. M. Hevezi, Ph.D., Rapid City, South Dakota 57701. (Route #1, Box 122E)

5. Only  $P_{32}$  and I-131 will be used. Both will be assayed by the supplier.  $P_{32}$  will be withdrawn and injected with a shielded plastic syringe. I-131 will be withdrawn and transferred to a shielded waxed cup with a mechanical pipette. All I-131 will be administered orally.

6. Donald H. Breit, M.D., Donald J. Peik, M.D., Bryson R. McHardy, M.D., M. Frank Peterreit, M.D., Leland J. Larson, M.D., and Robert P. DeClark, M.D. qualify as users from previous authorization by A.E.C. license 40-01493-02, in accordance with Item 8, Page 13, Guide for preparation of applications for Medical Programs, Introduction Section.

Lynn A. Henrickson, M.D., licensed to practice medicine in South Dakota, was recently certified by The American Board of Radiology in Diagnostic Radiology with special competence in Nuclear Radiology. This we understand qualifies him to be a user. 6/19/78 12/10/76

Daryl R. Wierda, M.D., Ralph L. Read, M.D., and James Quale, M.D., all licensed in South Dakota, were also recently certified by the American Board of Radiology in Diagnostic Radiology. Their examinations included a section on nuclear medicine but was not designated as with special competence.

7. Visually inspect package for any sign of damage (wetness, crushed, etc.). If damage noted, ask the carrier to remain and contact Radiation Safety Officer. The carrier is to remain until it can be determined that neither he nor the delivery vehicle is contaminated.

(b) If contamination found, notify the N.R.C. inspection and enforcement regional office (IV) 611 Ryan Plaza Drive, Suite 1000, Arlington, Texas 76019, phone day or night 817-334-2841.

If radiation levels are found on the external surface of the package in excess of 200 millicuries per hour or at 3 feet from package in excess of 10 MR/hr., stop and notify the above.

(c) Put on gloves. Open the outer package (following manufacturer's directions if supplied) and remove packing slip. Open inner package to verify contents (compare requisition, packing slips, and label on bottle). Check integrity of final source container (inspect for breakage of seals or vials, loss of liquid, discoloration of packing material).

(d) Check also that shipment does not exceed possession limits.

DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK PETEREIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES QUALE, M.D.

RADIOLOGISTS

MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

X-RAY DIAGNOSIS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CZESWIK  
BUSINESS MANAGER

Page 3  
June 19, 1978

(e) Wipe external surface of final source container with moistened cotton swab or filter paper held with forceps, assay and record.

(f) Monitor the packing material and packages for contamination before discarding.

1. If contaminated, treat as radioactive waste.
2. If not, obliterate radiation labels before discarding in regular trash.

8. Laboratory Rules for the Use of and Handling of Radioactive Material:

1. Wear laboratory coats or other protective clothing at all times in areas where radioactive materials are used.
2. Wear disposable gloves at all times while handling radioactive materials.
3. Monitor hands and clothing for contamination after each procedure or before leaving the area.
4. Syringe shields to be used in the preparation and administration of all doses where applicable, and not just for phosphorous-32.
5. Eating, drinking of beverages, smoking or applying cosmetics in the laboratory areas is prohibited.
6. Pipetting of radioactive materials by mouth is prohibited at all times.

9. The emergency procedures shall be followed in case of spills or other types of accidents. A copy of the procedures is posted conspicuously in the laboratory area.

10. The hospitalization of patients treated with radioactive materials has been discussed with the hospital administration including the necessity for protective measures for personnel. The rules and regulations for the administration and for the nurses, which meet the requirements of the N.R.C., was furnished, copies of which are enclosed. A reply from the hospital administration is enclosed.

A statement will be placed on hospital chart, that should patient need emergency surgery or expire to notify Radiation Safety Officer at Medical X-Ray Center promptly.

DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK PETEREIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES GUALE, M.D.

RADIOLOGISTS

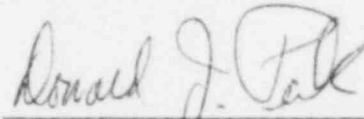
MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

X-RAY DIAGNOSIS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CZESWIK  
BUSINESS MANAGER

Page 4  
June 19, 1978

11. The radioisotope preparation and work area will be monitored daily or after each use. A comprehensive weekly survey will be conducted in all the radioisotope areas including wipe tests.
12. The cap will be removed from the bottle using the furnished cap remover while bottle remains in shielded container. The procedures outlined in Appendix F of the Guide Manual will be followed.
13. Finger badges will be used in the isotope preparation and elution areas.
14. All radioactive wastes held for decay will be monitored with all shielding removed prior to disposal in normal waste systems.



Donald J. Peik, M.D.  
Radiation Safety Officer

DJP/am

DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK PETEREIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES QUALE, M.D.

RADIOLOGISTS

# MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

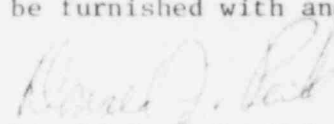
June 14, 1978

X-RAY DIAGNOSIS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CZESWIK  
BUSINESS MANAGER

## REGULATIONS FOR HOSPITALIZED PATIENTS RECEIVING I-131 OR P<sub>32</sub> THERAPEUTICALLY.

- I Patient admitted to private room with toilet. A sign shall be posted on door of room "Caution Radiation Area." (3 bladed sign)
- II A High Radiation Area sign shall be posted on bed and on or over waste disposal container.
- III Disposable plates, cups, eating utensils, tissue, surgical dressings and other similar waste will be placed in a specially designated container. This will be collected daily by the Radiation Safety Officer, checked for contamination and disposal of properly (as normal or radioactive waste).
- IV Non-disposable items will be held in plastic bags in the patient's room and checked for contamination.
- V Urine and vomitus from I-131 therapy patients will be stored for decay in the radioactive waste storage area until background levels reached.
- VI Before a therapy patient's room is reassigned to another patient, the room will be surveyed and all radioactive waste removed.

Nursing instructions will be furnished with and for each patient.

  
Donald J. Peik, M.D.  
Radiation Safety Officer  
Medical X-Ray Center

DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK FETENZIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES QUALE, M.D.

RADIOLOGISTS

## MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

June 15, 1978

X-RAY DIAGNOSIS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CZESWIK  
BUSINESS MANAGER

### NURSING INSTRUCTIONS FOR CARE OF PATIENTS RECEIVING P<sub>32</sub> OR I-131 TREATMENT.

1. Nurses should spend only the amount of time near the patient required for ordinary nursing care. Nurses should read all instructions and restrictions before administering to the patients. Call the radiation safety office, Doctor Peik, if any questions.
2. Visitors will be limited to those 18 years of age or more unless instructions are noted on the precaution sheet in patient's chart.
3. Patients must remain in bed while visitors are in the room and visitors should remain at least 3 feet from the patient.
4. Radioactive patients are to be confined to their rooms except for special medical or nursing purposes approved by radiation safety office. (Doctor Peik or designate)
5. No nurse, visitor or attendant who is pregnant should be permitted in the room of a patient who has received a therapeutic amount of radioactivity until the patient no longer presents a radiation hazard. Female visitors should be asked whether they are pregnant.
6. Attending personnel must wear rubber or disposable plastic gloves when handling urinals, bedpans, emesis basins, or other containers having any material obtained from the body of the patient. Wash gloves before removing and then wash hands. The gloves must be left in the patient's room in the designated waste container. The gloves need not be sterile or surgical in type.
7. Disposable items should be used in the care of these patients, whenever possible. These items should be placed in the designated waste container. Contact the Medical X-Ray Center for proper disposal of the contents of the designated waste container.
8. All clothes and bed linens used by the patient should be placed in the laundry bag provided and left in the patient's room to be checked by the safety office.



DONALD H. BREIT, M.D.  
DONALD J. PEIK, M.D.  
BRYSON R. MCHARDY, M.D.  
M. FRANK PETERIT, M.D.  
LELAND J. LARSON, M.D.  
ROBERT P. DE CLARK, M.D.  
DARYL R. WIERDA, M.D.  
RALPH L. READ, M.D.  
LYNN A. HENRICKSON, M.D.  
JAMES QUALE, M.D.

RADIOLOGISTS

MEDICAL X-RAY CENTER, P.C.

1417 SOUTH MINNESOTA AVENUE  
SIOUX FALLS, SOUTH DAKOTA 57105  
605-336-0515

X-RAY DIAGNOSIS  
X-RAY THERAPY  
RADIUM THERAPY  
RADIOACTIVE  
ISOTOPES  
COBALT THERAPY  
SPECIAL PROCEDURES  
F. R. CIESWIK  
BUSINESS MANAGER

Page 2

9. All non-disposable items should be placed in a plastic bag and left in the patient's room to be checked by the safety office or his designate.

10. For Iodine-131 patients:

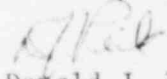
a) Urine from I-131 patients will be collected in special containers provided by the Medical X-Ray Center. The patient should be encouraged to collect his own urine in the container. If the patient is bed ridden, a separate urinal or bed pan should be provided. The urinal or bed pan should be flushed several times with hot soapy water after use.

b) If the nurse helps to collect the excreta, she should wear disposable gloves. Afterwards, she should wash her hands with the gloves on and again after the gloves are removed. The gloves should be placed in the designated waste container for disposal by the Medical X-Ray Center.

c) Disposable plates, cups, and eating utensils will be used by patients who are treated with I-131.

d) Vomiting within 24 hours after oral administration, urinary incontinence, or excessive sweating within the first 48 hours may result in contamination of linen or floor. In any such situations or if radioactive urine and or feces is spilled during collection, call Medical X-Ray Center, 336-0515. Meanwhile, handle all contaminated material with disposable gloves and avoid spreading contamination.

e) All vomitus must also be kept in the patient's room for disposal by the Radiation Safety Office.

  
Donald J. Peik, M.D.  
Radiation Safety Officer  
Medical X-Ray Center

REFER TO

1100 South Euclid Avenue



Sioux Falls, South Dakota 57105

June 21, 1978

Donald J. Peik, M.D.  
Radiation Safety Officer  
Medical X-Ray Center  
1417 South Minnesota Avenue  
Sioux Falls, SD 57105

Dear Dr. Peik:

We at Sioux Valley Hospital have incorporated into our procedures the regulations for hospitalized patients who will receive Radioisotope therapy and we have reviewed and discussed our method of managing any problems and/or regulations of the N.R.C. and find that none of these will cause us any problem as it relates to protecting the patient as well as personnel at Sioux Valley Hospital.

Please accept this letter as confirmation and agreement that these patients can be transferred and treated at Sioux Valley Hospital and the necessary safety precautions will be followed.

Sincerely,

Lyle E. Schroeder  
President

LES/kf  
cc: Dick Bohy



June 19, 1978

2449

EMERGENCY PROCEDURES

A. MINOR SPILLS

1. Notify persons in the area that a spill has occurred.
2. Prevent the spread; cover the spill with absorbent paper.
3. Clean up: Use disposable gloves and remote handling tongs. Carefully fold the absorbent paper and pad. Insert into a plastic bag and dispose of in the radioactive waste container. Include all other contaminated materials such as disposable gloves.
4. With a survey meter, check the area around the spill, your hands and clothing for contamination.
5. Report incident to the Radiation Safety Officer.

B. MAJOR SPILLS

1. Clear the area. Notify all persons not involved in the spill to vacate the room.
2. Cover the spill with absorbent pads, but do not attempt to clear it up. Confine the movement of all personnel potentially contaminated to prevent the spread.
3. Shield the source: If possible, the spill should be shielded, but only if it can be done without further contamination or without significantly increasing your radiation exposure.
4. Close the room. Leave the room and lock the doors to prevent entry.
5. Call for help. Notify the Radiation Safety Office immediately.
6. Personnel Decontamination: Contaminated clothing should be removed and stored for further evaluation by the Radiation Safety Officer. If the spill is on the skin, flush thoroughly and then wash with mild soap and lukewarm water.

RADIATION SAFETY OFFICER Donald J. Peik, M.D.

OFFICE PHONE 336-0515

HOME PHONE 335-8651

## QUOTATION

DATE June 20, 78

### PICKER CORPORATION

CORPORATE OFFICE/595 MINER ROAD/CLEVELAND, OHIO 44143

NUMBER 543-1776-010620

SOLD TO

MEDICAL X RAY CENTER  
1417 south Minnesota Ave.  
Sioux Falls, South Dakota  
57105

Picker Corporation is pleased to submit the following quotation, consisting of 1 pages, and offers to sell the products described herein at prices and terms stated, subject to your acceptance of the terms and conditions within 45 days.

The prices stated herein are based on delivery of the Equipment during the month of July  
(See 6. (a), 6. (b) on reverse side.)

Gary Lee, Sales Representative

QUANTITY and CATALOG NUMBER	DESCRIPTION	PRICE
1 632-507	Picker Isotope Calibrator Factors are included for 24 commonly used diagnostic, therapeutic, and calibration isotopes under various geometry and volume conditions. 131I and 32P are included.	
1- 632-195	CO-57 Calibrated RADIOISOTOPE STANDARD approx 5mc in 20 ml vial (copy of customer license is enclosed)	
1- 655-001	CUTIE PIE SURVEY METER Four full-scale ranges: 25,250,2500, and 25,000mR/hr. Minimum energy detected: alpha, over 3.5 MeV; beta, about 40 keV gamma and x-ray, 40 keV to 3 MeV	
TOTAL F.O.B. MEDICAL CENTER		\$3,487.00

TERMS OF DELIVERY F.O.B. POINT OF SHIPMENT - FRT  
PREPAID AND ALLOWED  
TERMS OF PAYMENT 80% UPON SHIPMENT OF MAJOR COMPONENTS  
OF EQUIPMENT ON THE ORDER  
BALANCE UPON FIRST USE OF EQUIPMENT

### PICKER CORPORATION

2797 Eagandale Blvd  
St. Paul, Minnesota 55121

DISTRICT OFFICE

*Peter C. Houston*  
AUTHORIZED SIGNATURE

June 20, 1978

DATE

CUSTOMER APPROVAL AS QUOTED  
*Ronald B. Breit M.D.*  
CUSTOMER SIGNATURE  
*Radiologist*  
TITLE  
6-21-78  
DATE

ADDITIONAL TERMS OF QUOTATION APPEAR ON REVERSE SIDE

# CERTIFICATE OF RADIOACTIVITY CALIBRATION

Gamma Reference Source, Vial Type E  
Catalog No. NES-356  
Cesium-137

Half-Life:  $30 \pm 0.5$  yrs.

The source content activity of Cesium-137 was measured and determined to be 216  
microcuries  $\pm 4.3\%$  effective August 2, 1977 for Source Ser. No. 319-076-21.

## DESCRIPTION OF THE SOURCE

The activity is uniformly distributed in a cast epoxy resin matrix equivalent to 20 milliliters of solution in a 30 milliliter polyethylene vial.

## PRINCIPAL RADIATIONS

	Intensity (%)
L-X-ray 0.00447 MeV	1.25
K-X-ray 0.0329	6.88
$\gamma_1$ 0.662	84.6

## METHOD OF CALIBRATION

The source was calibrated by direct comparison to a standard certified by the National Bureau of Standards by measurement of the current produced in a  $4\pi$  gamma ionization chamber using a precision electrometer.

## IMPURITIES

Less than 1% by Ge(Li) solid state detector gamma ray spectrometry.

## ERRORS

Random Errors (3 times the standard deviation)

Precision of the NENC measurement  $\pm 2.5\%$

Systematic Errors

Accuracy of the NBS standard  $\pm 1.0\%$

Overall Error

2.5 + 1.0 =  $\pm 4.3\%$

This Vial E Reference Source is licensed by the U.S. Nuclear Regulatory Commission pursuant to 10CFR 32.74 for distribution to persons licensed pursuant to 10CFR 35.14 or equivalent agreement state license.

**NEN** New England Nuclear Boston, Massachusetts

**NEN** New England Nuclear

549 Albany Street, Boston, Mass. 02118  
CUSTOMER SERVICE: (617) 482-9595

Margaret Brumanski

Rec'd 8-22-77  
Count  $\pm$  Picker Sealer  
@ 150 863  
3000 dist  
2 min  
Through Container

2449

Save!  
N