



VETERANS ADMINISTRATION
HOSPITAL
SEVENTH STREET AND INDIAN SCHOOL ROAD
PHOENIX, ARIZONA 85012



January 11, 1979

IN REPLY
REFER TO: 115

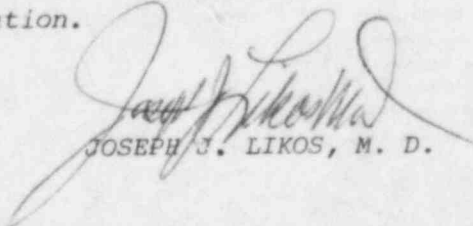
0320

• Joseph DelMedico
License Management Branch
Division of Fuel Cycle and Material Safety
US Nuclear Regulatory Commission
Washington, D.C. 20420

SUBJ: License Renewal Control #95950

In response to your request we submit the following:

1. See attached procedures.
2. We are in the process of ordering calibration source of Ba^{133} , 250 uCi from New England Nuclear.
3. The Medical Isotopes Committee is composed of the following. See attached list.
4. Finger badges are used by individuals eluting generator and preparing radiopharmaceuticals. Badges are obtained from Searle Analytic and changed monthly.
5. See enclosed memo for laboratory personnel and security personnel.
6. See enclosed personnel training program.
7. We do not use liquid Iodine 131 . Diagnostic and therapeutic studies are performed using Iodine 131 capsules. In case liquid Iodine 131 should be used, personnel handling liquid Iodine 131 would be checked with Iodine 131 uptake scan 24 and 48 hours after handling such material.
- 8a. Exhaust air from imaging areas is recirculated.
- b. Manufacturers procedure for monitoring trap exhaust will be followed. See attached procedure.
- c. See attached diagram and explanation.


JOSEPH J. LIKOS, M. D.

ENCLOSURES

8510240088 850821
REG5 LIC30
02-10072-01 PDR

Memorandum

DATE: December 22, 1978

TO: Laboratory Personnel, Security Personnel

FROM: JOSEPH J. LIKOS, M.D. - Radiation Safety Officer

SUBJ: RECEIPT OF PACKAGES CONTAINING RADIOACTIVE MATERIAL

0320

Any packages containing radioactive material that arrives between 4:00 p.m. and 7:00 a.m. or on Sundays shall be delivered immediately to the Laboratory where it will be signed for by the Laboratory person on duty.

If the package is wet or appears to be damaged, immediately contact the Hospital Safety Officer. Ask the carrier to remain at the hospital until it can be determined that neither he or the delivery vehicle is contaminated.

RADIATION SAFETY OFFICER: JOSEPH J. LIKOS, M.D.

OFFICE PHONE: 277-5551 Ext. 621

HOME PHONE: 944-0505

Item No. 13

DATE: _____



The following is a list of names and qualifications of individual members of the Medical Isotopes Committee.

JOSEPH J. LIKOS, M.D. - Chief, Laboratory Service & Nuclear Medicine
Certified in Clinical Pathology, Pathological
Anatomy, Radioisotopic Pathology.

GEORGE F. LULL, JR. M.D. - Chief, Radiology Service, Certified in
Radiology.

N. H. ZELLER, M.D. - Chief, Medical Service, Certified in Internal
Medicine.

WILLIAM H. LAWRENCE, M.D. - Chief, Neurology Service, Certified in
Neurology.

RICHARD NICHOLS, M.D. - Urological Surgeon, Certified in Urology.

MARY RYAN - Clinic Nurse Specialist.

ROBERT J. PILTZ, PhD. - Chief, Psychology Service.

A training program of lectures and demonstrations will be conducted for all personnel working with or in the vicinity of radioactive material covering the items in Section 19.12 of 10CFR Part 19, including:

- a. A tour of the area where the radioactive materials are used or stored.
 - b. The potential hazards associated with radioactive materials.
 - c. A review of radiological safety procedures appropriate to their respective duties.
 - d. Pertinent NRC regulations .
 - e. The rules and regulations of the Nuclear Medicine Service.
 - f. Pertinent terms of the license.
 - g. The responsibilities and obligations to report unsafe conditions.
 - h. Policy for response to emergencies and reporting of unsafe conditions.
 - i. Their right to be informed of their radiation exposure and bioassay results.
2. Appropriate instruction will be given prior to assumption of duties by new personnel.
 3. All personnel working with or in the vicinity of radioactive material will be given an annual refresher course covering the items listed in the training program.
 4. Additional instruction or training will be given whenever there is a significant change in duties, regulations or terms of the license.
 5. A verified record of the training for each person working with or in the vicinity of radioactive materials will be maintained in the department to be reviewed by the Isotope Committee at least once a year.

~~HS-12~~
May 16, 1978

ARADTEK, INC.

December 17, 1978



P.O. Box 40813
Tucson, Arizona 85717
(602) 298-0756 or
(602) 749-4074

8301 S. Terrace
Tempe, Arizona 85284
(602) 839-5751

C320

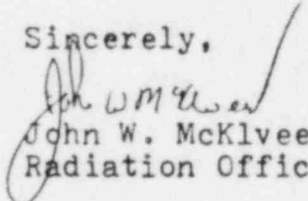
Mr. Bob Lindsley
Department of Nuclear Medicine
Veterans Hospital
Phoenix, Arizona 85012

Dear Mr. Lindsley:

Aradtek, Inc. is licensed through the Arizona Atomic Energy Commission (10-55) and is incorporated in the state of Arizona.

Source used for detector calibration is a ^{137}Cs , TECH/OPS Model #726 portable gamma ray instrument calibrator. We calibrate on at least two points for each range on the instrument up to the limit of the ^{137}Cs point source, which is on the order of 2 R/hr. For instrument ranges above this exposure rate we use a larger, but less accurate line source of ^{137}Cs . As a cross check we look for close agreement between exposure rates which can be read on adjacent ranges.

Sincerely,


John W. McKlveen, Phd
Radiation Officer

XENON GAS TRAP

TEST PROCEDURE FOR MONITORING TRAP EXHAUST

Trap exhaust is monitored by using the gamma camera without a collimator. The following simple technique is used:

1. Remove the collimator from the camera.
2. With a 5 percent window, calibrate for Xe-133.
3. Fill a large plastic bag with a known volume of air (typically, 50 liters).
4. Inject a known quantity of Xe-133 (such as 100uCi) into the bag. The concentration will be 2×10^{-3} uCi cm³.
5. Place the bag in front of the crystal and count for a known period of time. The c/m obtained is a measure of the efficiency.
6. Collect the exhaust of a typical study in another bag of the same volume (50 liters) and count as defined in Step #5.
7. Ratio the count rates to the standard taken to determine exhaust concentration.

For example:

If 2×10^{-3} uCi/cm³ yielded 600,000 c/m above background, and collected effluent from the patient study was 150 c/m above background, then:

$$\text{Ratio} = \frac{1.5 \times 10^2 \text{ c/m}}{6 \times 10^5} = 2.5 \times 10^{-4}$$

Exhaust Concentration

$$\begin{aligned} &= R (2 \times 10^{-3} \text{ uCi/cm}^3) \\ &= (2.5 \times 10^{-4}) (2 \times 10^{-3}) \\ &= 5 \times 10^{-7} \text{ uCi/cm}^3* \end{aligned}$$

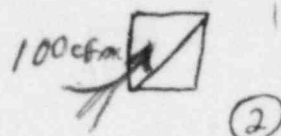
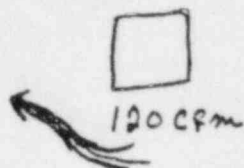
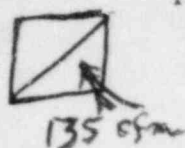
*MPC Xe-133 controlled area should not exceed 1×10^{-5} uCi/cm³

8. c. The attached diagram showing air flow is based on old figures received from Engineering Department before remodeling of Nuclear Medicine Department. The current air flow is 450 cfm coming and 110 cfm going out. The Engineering Department is in process now of installing new air flow ducts which will render the necessary negative pressure. We will submit a new facility diagram as soon as new air flow figures become available.

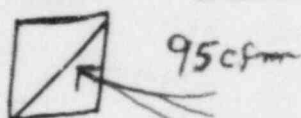
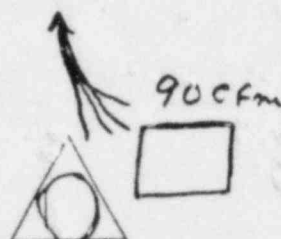
□ MR. IN 290 cfm
▣ AIR OUT 330 cfm

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IMAGING ROOM
(5460 cu ft)



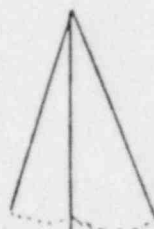
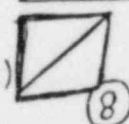
②



⑨

③

HOT LAB
(990 cu ft)



⑤

⑦

④



⑥



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HOSPITAL
SEVENTH STREET AND INDIAN SCHOOL ROAD
PHOENIX, ARIZONA 85012

RECEIVED

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January 11, 1979

IN REPLY
REFER TO 115

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ADCMD For Operations (115)
ATTN: James J. Smith, M.D.
Department of Medicine & Surgery
VA Central Office
Washington, D.C. 20420

11/19

SUBJ: License Renewal Control #95950

Please forward the attached letter to Mr. Joseph DelMedico at the
License Management Branch, Division of Fuel Cycle and Material
Safety, US Nuclear Regulatory Commission, Washington D. C. 20555.

Thank You.

Joseph J. Likos
JOSEPH J. LIKOS, M. D.
Chief, Laboratory Service

Enclosures

*Hospital Director, Ft. Turner Camp
has reviewed and approved the
attached response to the N.R.C. 1/24/79*

JAN 25 1979
James J. Smith
JAMES J. SMITH, M. D. (115)
Director, Nuclear Medicine Service
VA Central Office
Washington, D.C. 20420

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INSPECTION AND ENFORCEMENT